Basics of Pruning

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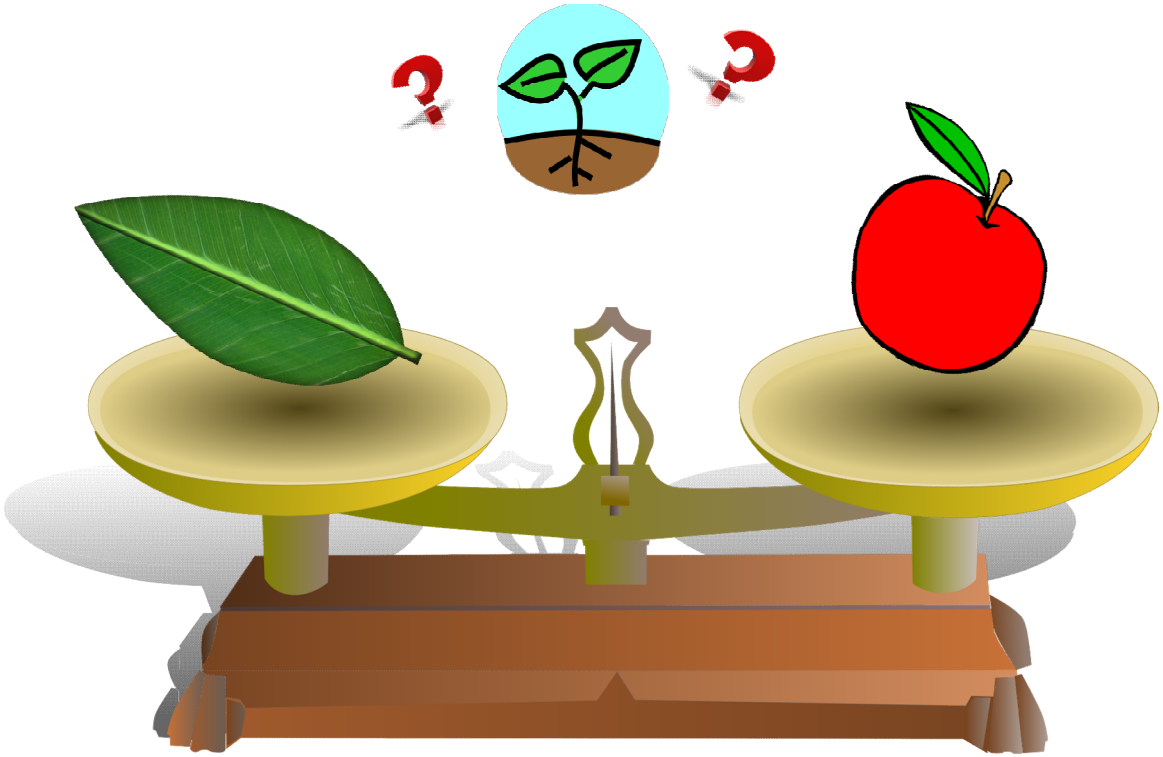
Thanks to Elena Garcia for sharing her slides

What We Need to Know to Prune Effectively

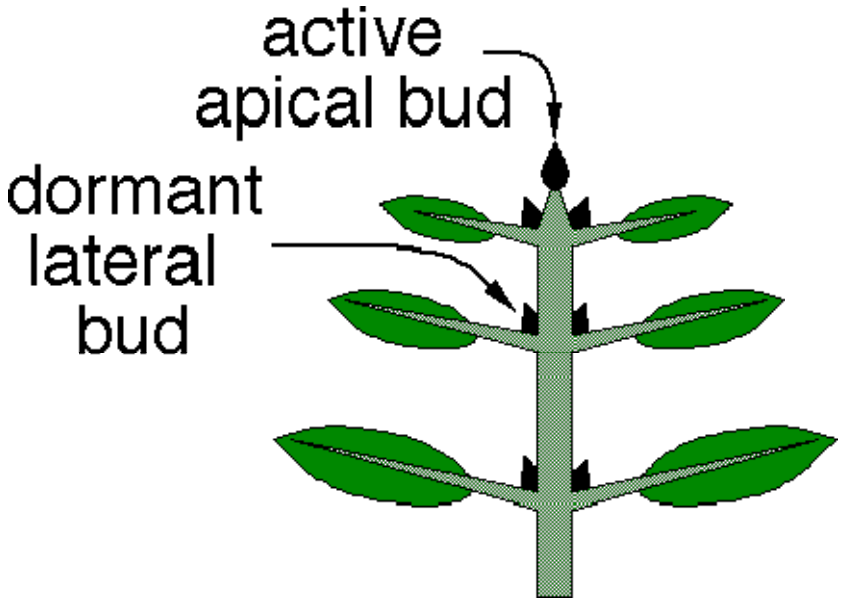
- Why — Why go to the trouble? Cutting off all that plant growth!?
- Who — Apple, Blackberry, Blueberry, Grape, Peach
- What — What parts of the plant to remove?
- Where — Where in the plant canopy?
- When — When in the year?
- How — Types of Pruning Cuts

Why Do We Prune?



- Developing a plant structure that maximizes fruit growth and quality
  - Producing a supporting framework for the tree
  - Promote annual flower formation
- Ease of management
  - Increase air movement; reduce disease incidence

The What and the Where: Choosing branches, canes, stems for removal



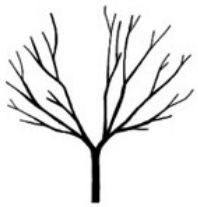
- *Auxin (IAA) is produced by the apical meristem and prevents lateral buds from breaking*
- When the apical bud is removed, the source of IAA is removed. Since the auxin concentration is much lower, the lateral buds can now grow.
- Suppression or release of lateral buds is the basis for plant shape or form
- By pruning carefully, the branching pattern and form of the plant can be controlled.

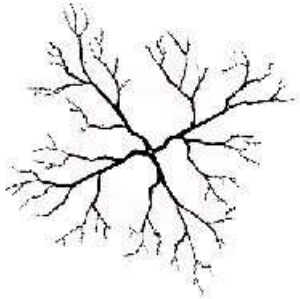
Flower Buds, Leaf Buds, Mixed Buds

Pruning for Training, Developing Canopy Shape

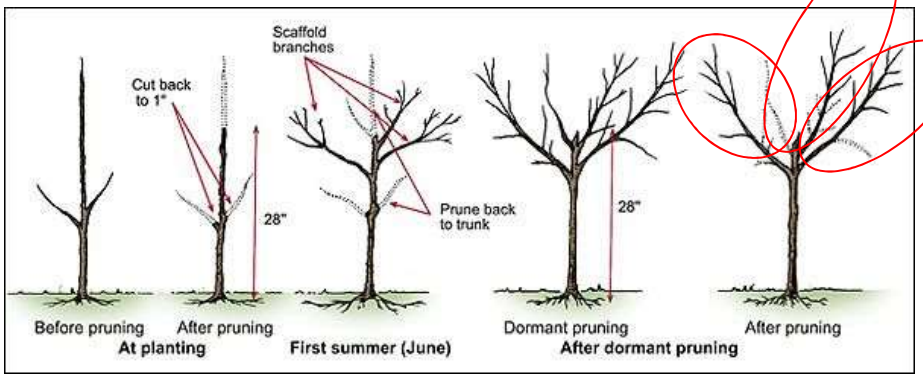
Open Center- Stone Fruit

- Peach, Nectarine



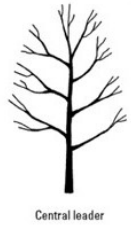


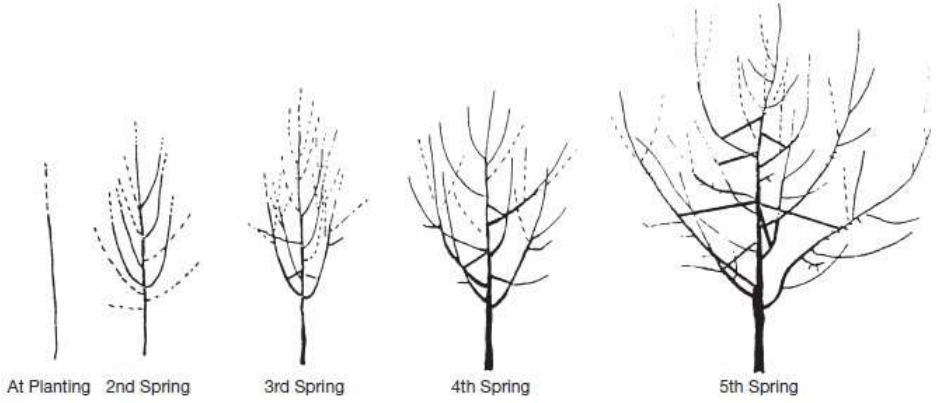
Scaffold Branches



Central Leader- Pome Fruit

- Apple, Pear, Cherry



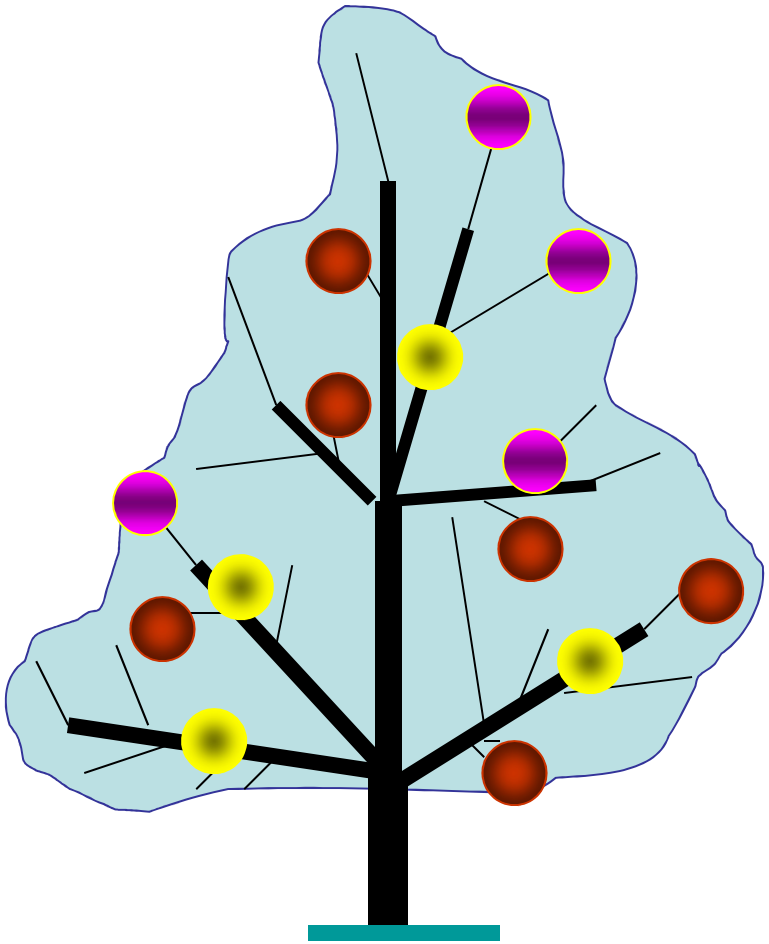


Where are the flower buds located ?

Prune to balance fruit production this season and shoot/ leaf production (next seasons fruit)

Fruit	**Flowers borne on**
Apple	Terminal buds, spurs 2yro.
Pear	Terminal buds, spurs 2yro.
Peach	Lateral buds, 1 yro. shoots
Blackberry	1 year old laterals. Current year maybe
Blueberry	1 year old wood
Grape	New growth, emerging from 1 yro. canes

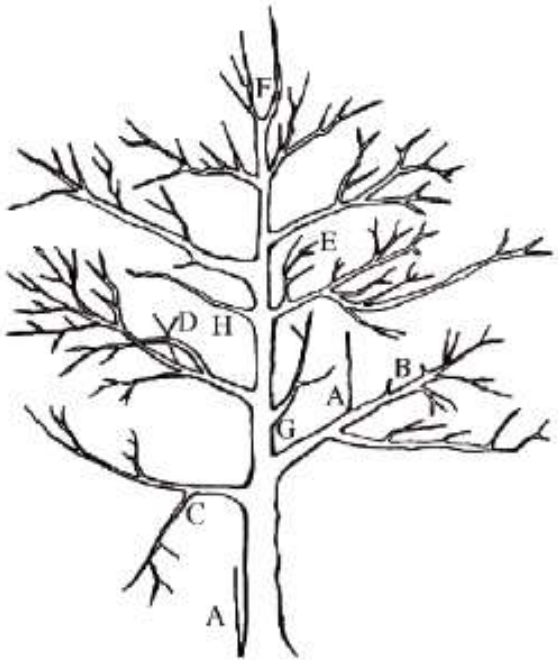
Where fruit is formed



- Apples, pears, cherries: spurs (two-three year old wood)
- Peaches, nectarines, plums: one year old wood
- Figs, grapes: current year wood

The What and the Where: Choosing branches, canes, stems for removal

Pruning Mature Apple and Pear Trees



During the dormant season each year, remove the following:

A -- Suckers

B -- Stubs or broken limbs

C -- Downward growing branches

D -- Rubbing or criss-crossed branches

E -- Shaded interior branches

F -- Competing leaders

G -- Narrow crotches

The When: Timing

LATE WINTER

- Plant dormancy
  - Can see the plant architecture
  - Encourages strong spring growth
  - Less chance of infection in the cut
    - Peaches pruned too early- bacterial canker infection
- After chance of winter injury
  - Remove dead branches
- Some crops are also pruned in the summer
  - i.e. Blackberry tipping

The How: Types of Pruning Cuts

Heading Back Cut

- Removal of a part of a shoot or branch
- It removes terminal buds
- Major Physiological effects: **Apical dominance is weakened or lost**
- **Net result:** increase in total shoot growth

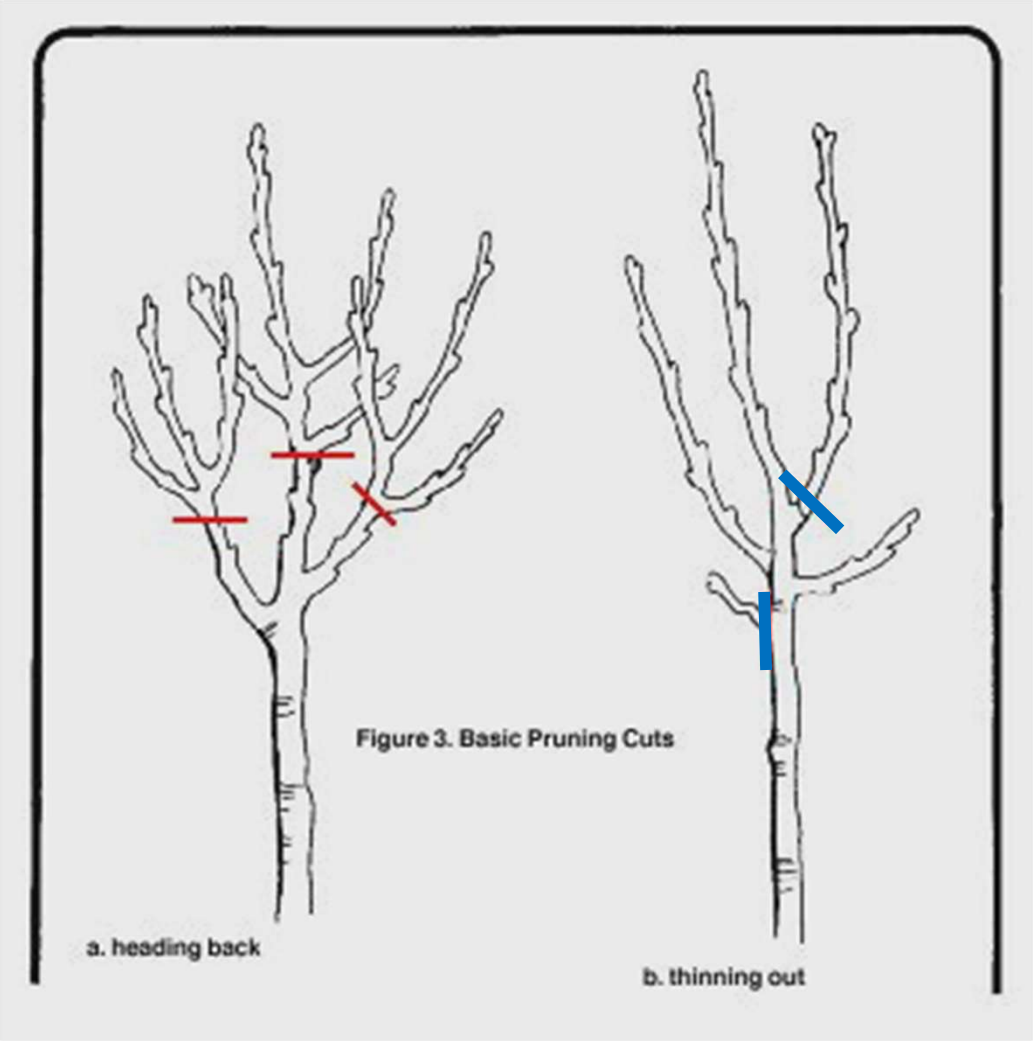


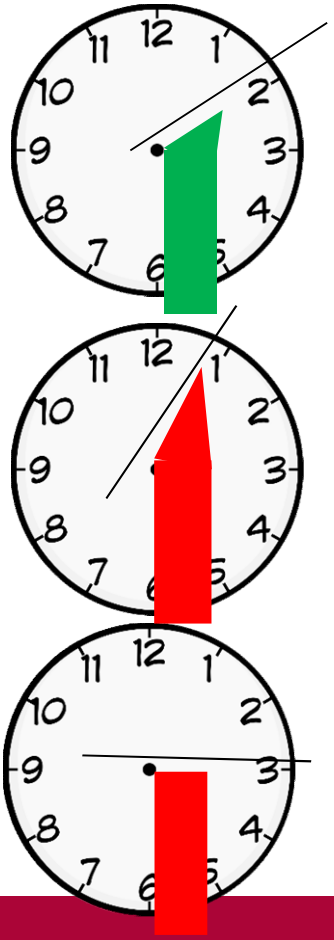
Figure 3. Basic Pruning Cuts

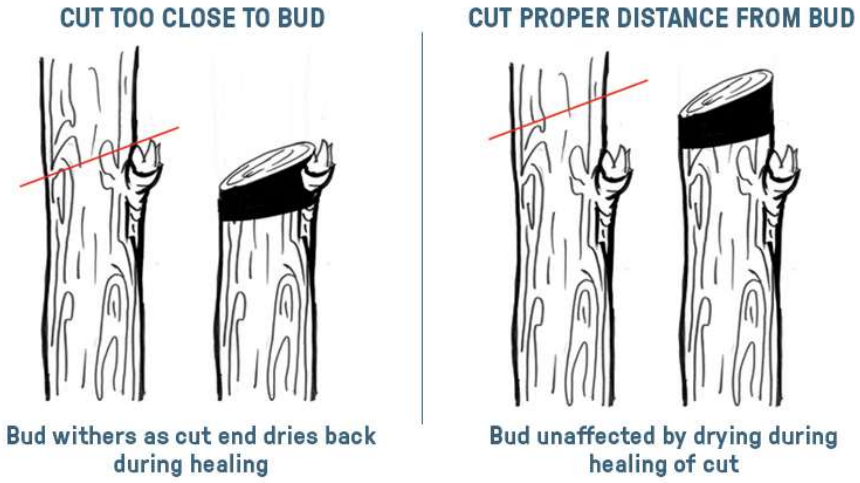
Thinning Out Cut

- Removal of an entire shoot or branch at its junction with the trunk
- Ratio of terminal to lateral buds is not disturbed; Less physiological changes
- **Net result:** smaller effect on increasing shoot growth

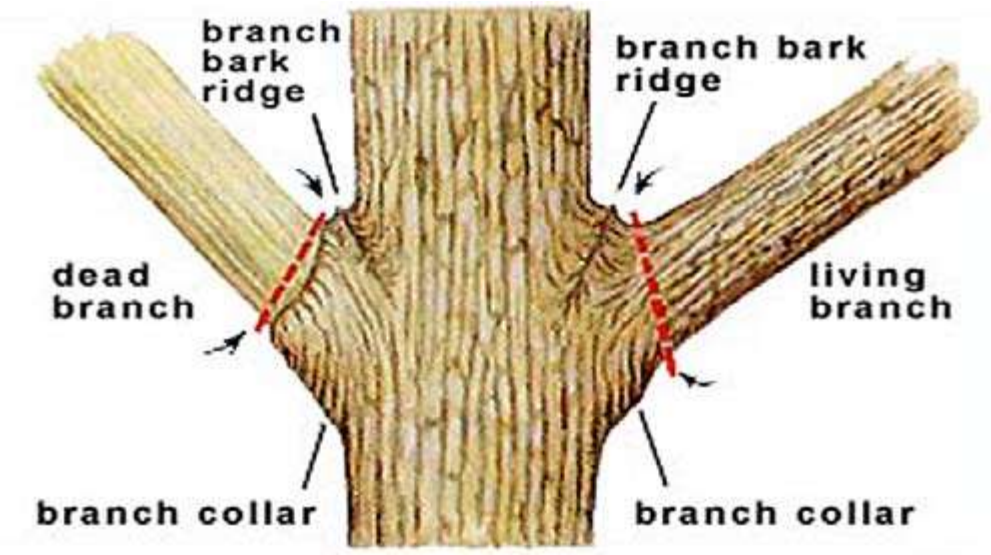
How: Angle of Cuts

- Prune to the lateral bud that will produce the branch you want
  - Choose buds that are facing outward, so growth doesn't go inward
- Prune at slight angle (10 o'clock or 2 o' clock)
- Prune enough above the bud so it doesn't die back

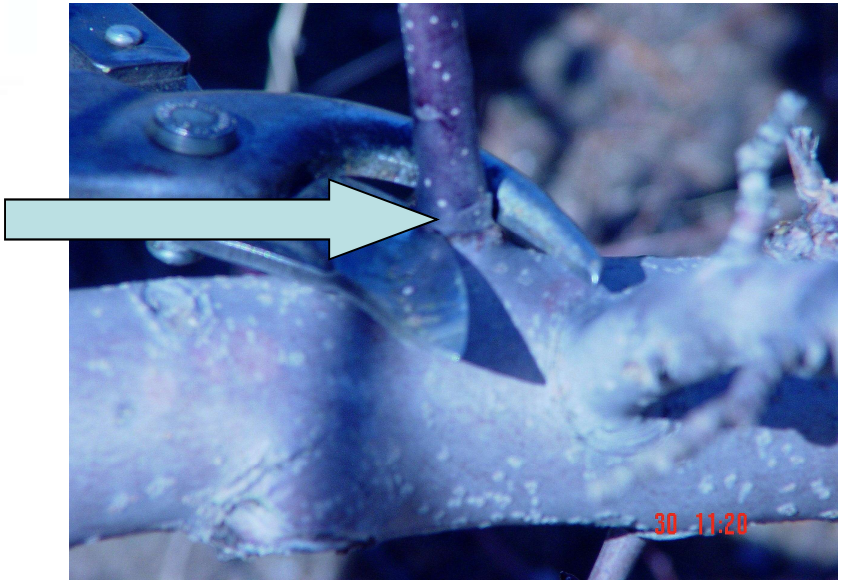




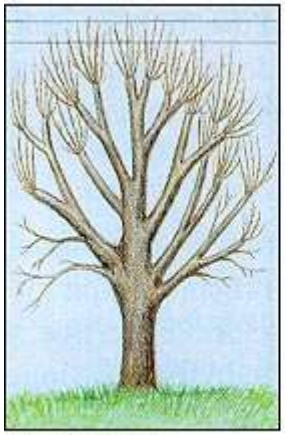
How to make the cut



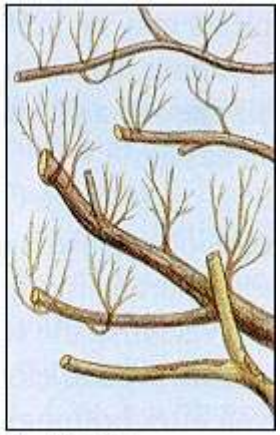
Cut above ‘collar’



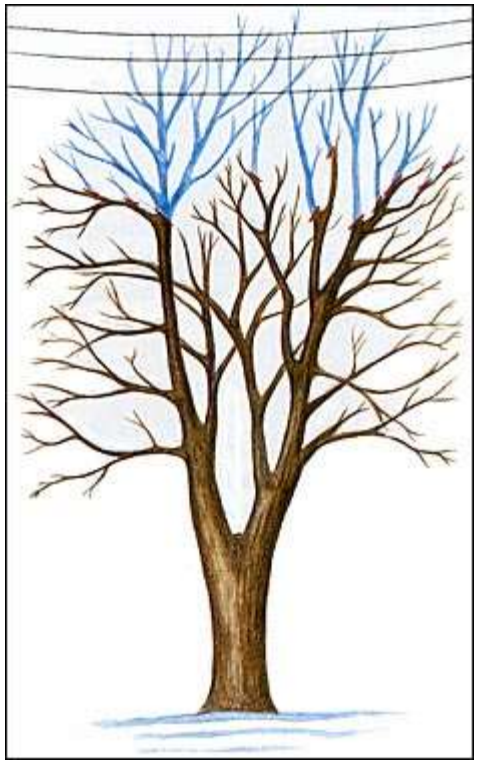
Bad Cuts

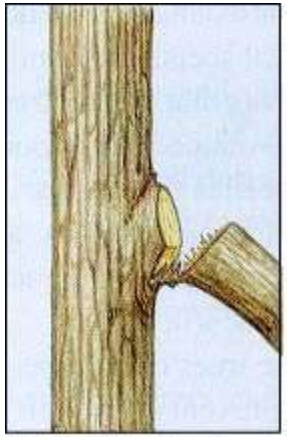


A. Topping

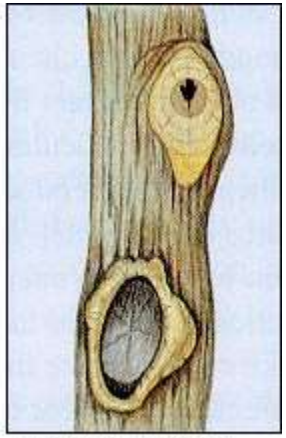


B. Tipping





C. Bark ripping



D. Flush cutting

How Much? Light Penetration

% of full radiation needed for various quality factors in apples

Character	Satisfactory development	Unsatisfactory development
Fruit size	>50%	<50%
Red color	>70%	<40%
Spur development	>30%	<25%

Use the right tool for the job

- By-pass type pruners
- Keep them sharp! Clean cuts are better for the plant

- Sanitizing Tools: *Rubbing alcohol, Lysol, Bleach* *(corrosion more likely)*
  - **Research is not so black and white on the need to sanitize or the best method**
  - **IF there are known virus or vascular tissue infection- best to sanitize between plants**

Sterilized Pruning Tools: Nuisance or Necessity?
Dr. Linda Chalker-Scott
WSU Puyallup Research and Extension Center

https://s3.wp.wsu.edu/uploads/sites/403/2015/03/Pruning.pdf

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