Pomology 101
Fruit Gardening

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http://Collin.agrilife.org & http://ccmgatx.org

Topics

- Fruits for North Texas
- Basic Biology of Fruit Trees and Berries
- Tips for successful Fruit Gardening
- Varieties for North Texas
- Tools for Pruning
- Pruning Methods

Fruit and Nut Gardening in Texas

- Apples
- Blackberries
- Blueberries
- Chestnuts
- Figs
- Grapes
- Jujubes
- Loquats
- Peaches
- Nectarines
- Plums
- Pears
- Pecans
- Persimmons
- Pistachios
- Pomegranates
- Raspberries
- Strawberries
- Tropical And Subtropical Fruits
- Walnuts

Fruit and Nut Crops in North Texas

- Apples
- Blackberries
- Chestnuts
- Figs
- Grapes
- Peaches
- Nectarines
- Plums
- Pears
- Pecans
- Persimmons
- Pomegranates
- Raspberries
- Strawberries
- Walnuts

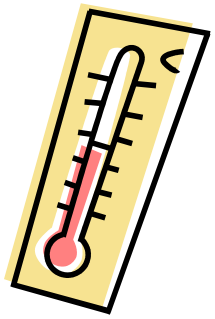
Easy Fruit and Nut Crops in North Texas

- Blackberries
- Figs
- Grapes
- Peaches
- Pears
- Pecans
- Persimmons
- Pomegranates
- Raspberries
- Strawberries

Biology

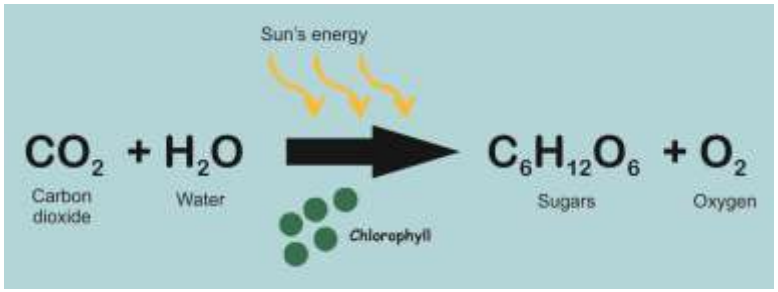
Requirements for plants:

Sun Light, Water, Air, Temperature and Fertile Soil



Biology

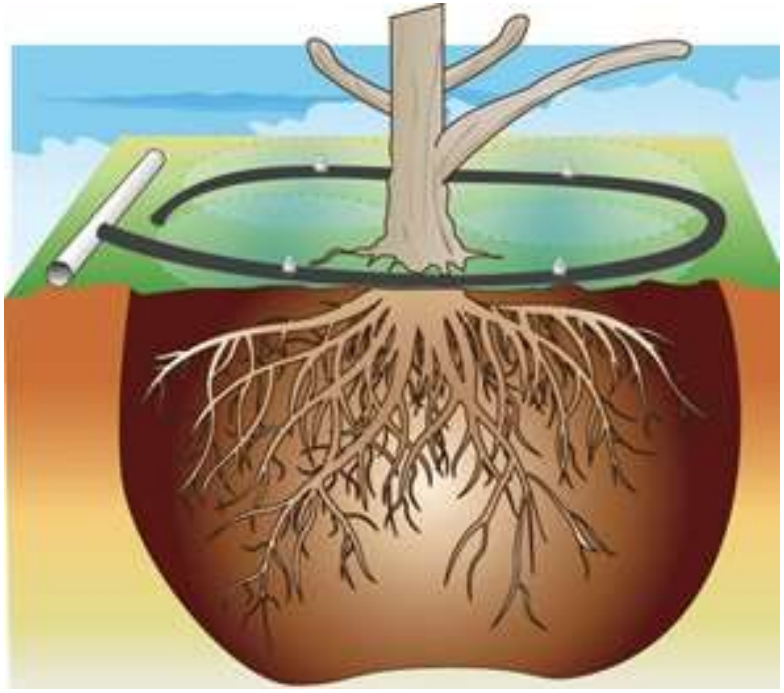
- Sunlight



Photosynthesis

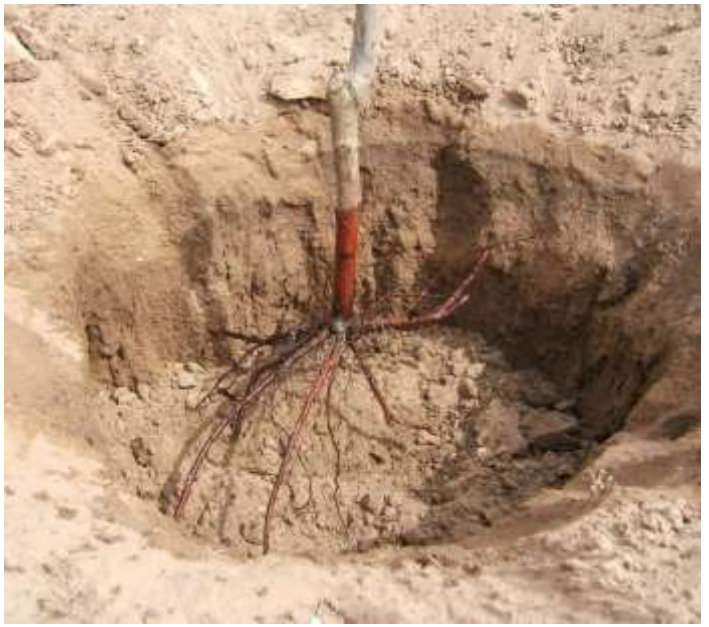
Biology

- Water



Biology

- Soil



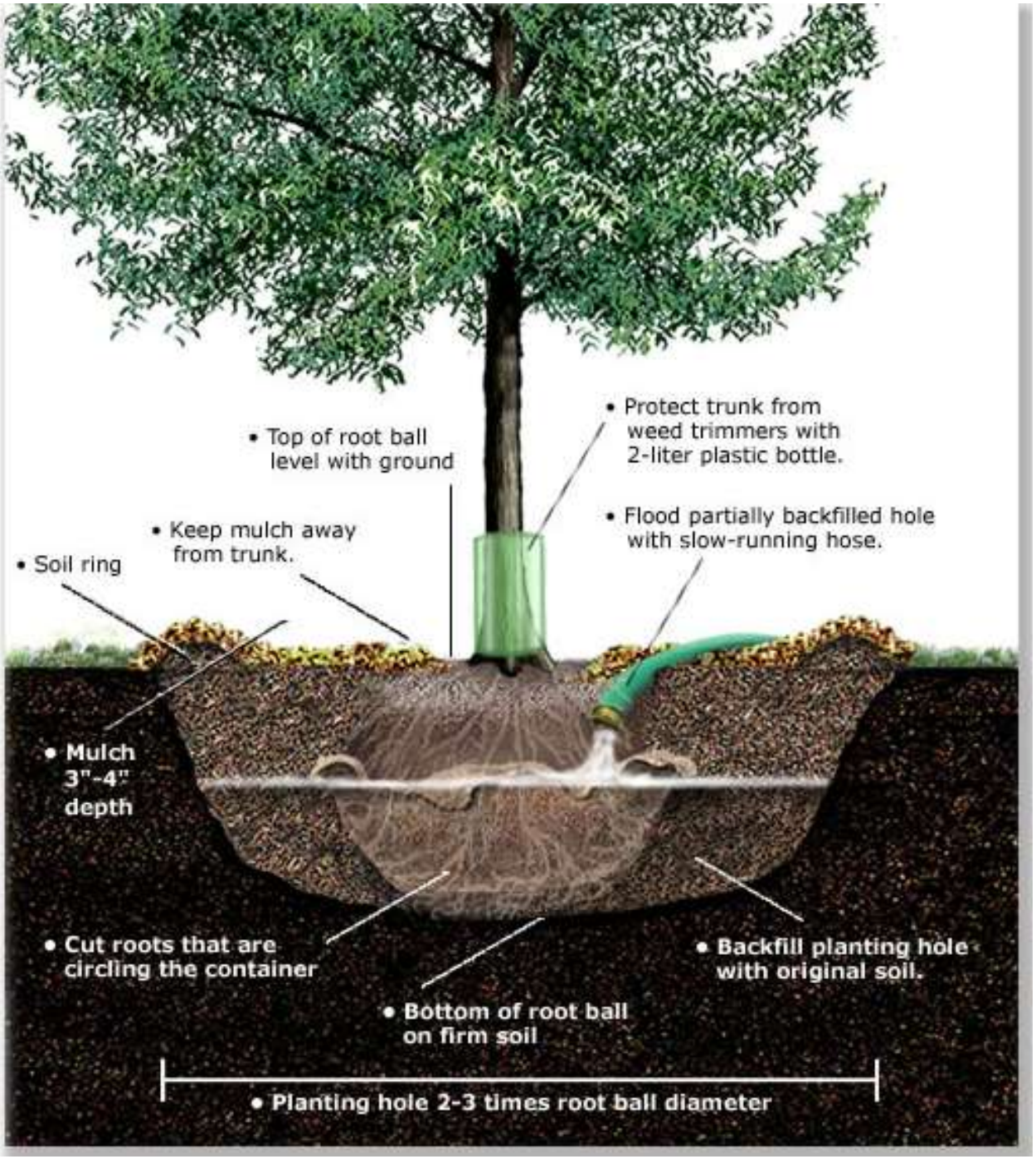
Biology

- Improve soil
  - Raised Bed
  - Improve Drainage
  - Improve Soil with amendments
    - Compost
    - Expanded Shale
    - Till with existing soil

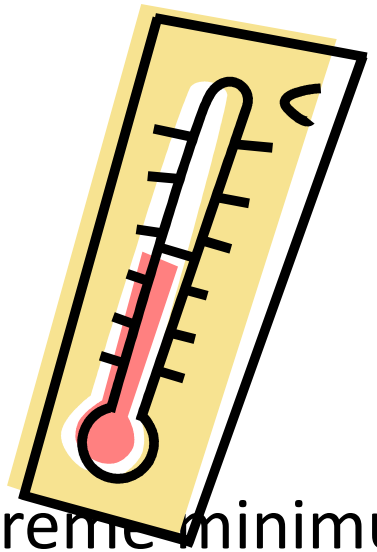
Biology

- Use organic mulch to help:
  - Conserve moisture to save water
  - Reduces evaporation
  - Prevents erosion
  - Controls Weeds
  - Relates soil temperature
  - Enriches soil nutrients
  - Increase soil health
  - Decrease soil compaction
  - 3 inches recommended

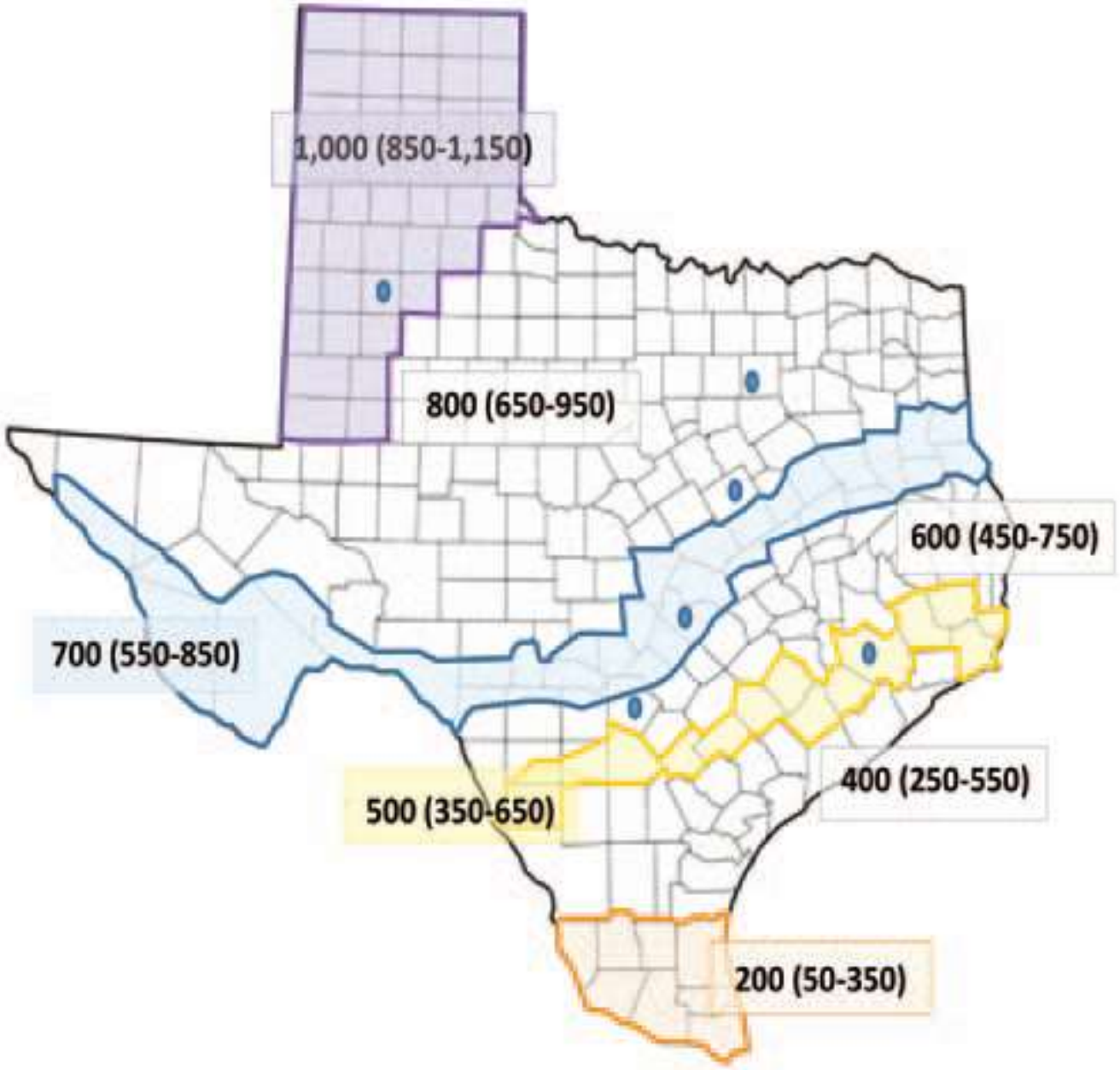
Planting a Fruit Tree


• Protect trunk from weed trimmers with 2-liter plastic bottle.
• Top of root ball level with ground
• Flood partially backfilled hole with slow-running hose.
• Keep mulch away from trunk.
• Soil ring
• Mulch 3"-4" depth
• Cut roots that are circling the container
• Backfill planting hole with original soil.
• Bottom of root ball on firm soil
• Planting hole 2-3 times root ball diameter

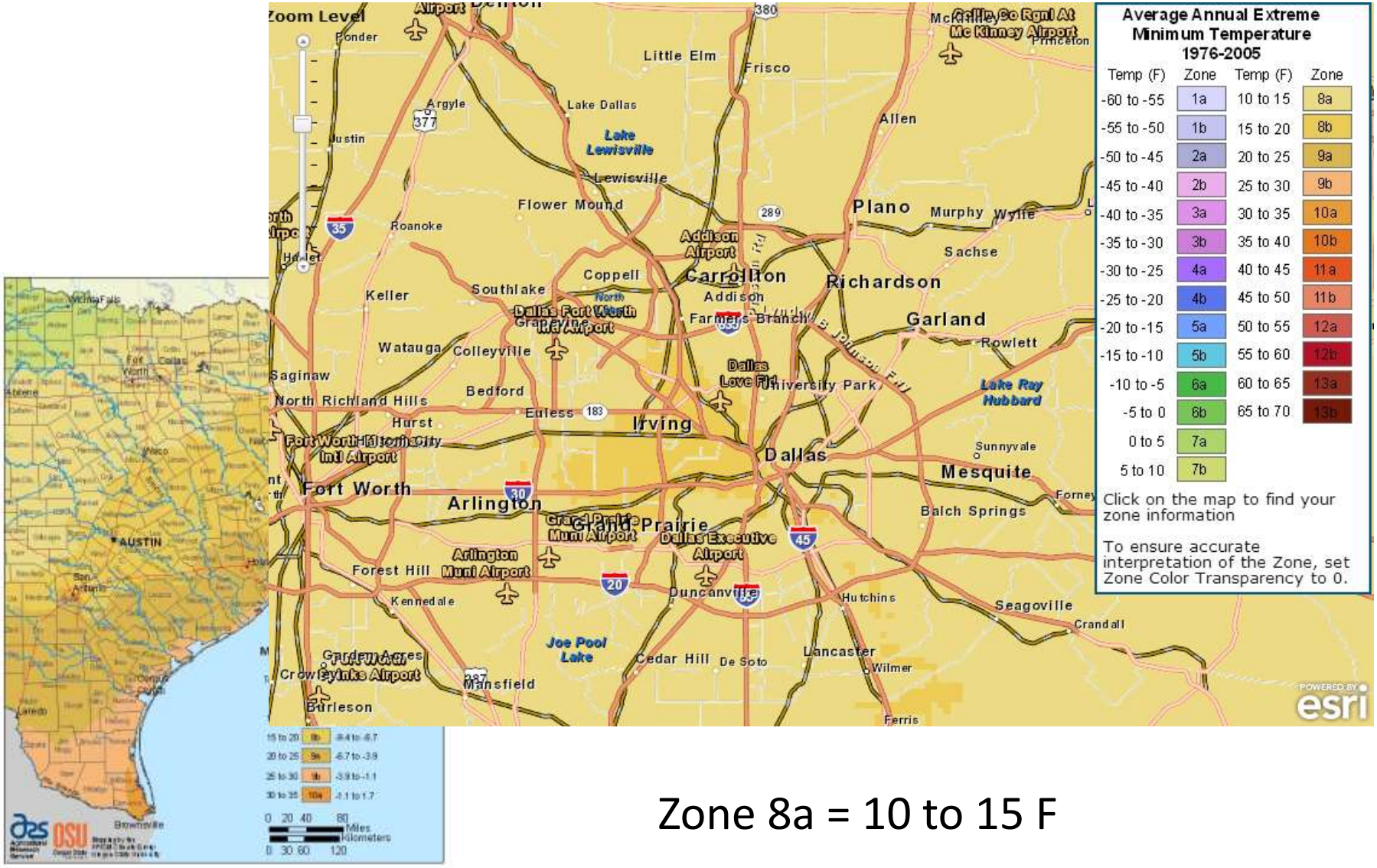
Biology



- Temperature
  - Hardiness
    - based on the average annual extreme minimum temperature
  - Chilling Requirements
    - Time between 32F and 45F from Oct-Feb
  - Climate can create the largest risk to success


1,000 (850-1,150)
800 (650-950)
600 (450-750)
700 (550-850)
400 (250-550)
500 (350-650)
200 (50-350)

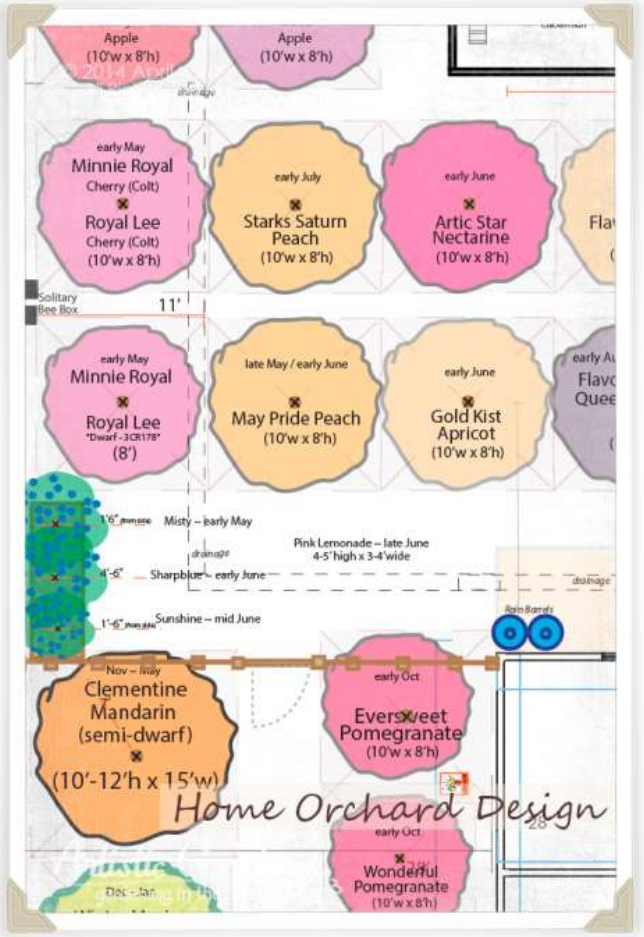
Biology – Temperature – Cold Hardiness



Zone 8a = 10 to 15 F

Tips for successful Fruit Gardening

- Select the proper site
- Use adequate plant spacing
- Test your Soil – type, drainage, nutrients, pH, Soil Properties
- Properly Water – Goldilocks principle
- Light - Full sun, at least 8 hours/day
- Provide all the requirements for the plant



Tips for Successful Fruit Gardening

- Select crops and varieties specific for our soil and climate
- Purchase quality plants from reputable nursery
- Don’t plant too deep
- Prevent disease and insect problem before they occur
- Use hardwood mulch around the drip line of the tree
- Realize Fruit Trees are short-lived, and won’t live forever

Variety Selection

- Learn as much as possible about the specific fruit crop
- Start by reviewing varieties recommend by Texas A&M Extension Horticulture @
  - AggieHorticulture.tamu.edu
- Check availability with Nursery
- Double check that the variety:
  - Has the proper chill hours
  - Adapted to your soil

Varieties for North Texas

- Blackberries –
  - Kiowa, Ouachita, Arapaho, Natchez, Chichasaw, Navaho, apache
- Figs –
  - Texas Everbearing (brown Turkey), Alma, Celeste
- Pears –
  - European Hybrids - Kieffer, Orient, Moonglow, Magness
  - Asian Varieties- 'Shinko', 'Shin Li'

Varieties for North Texas

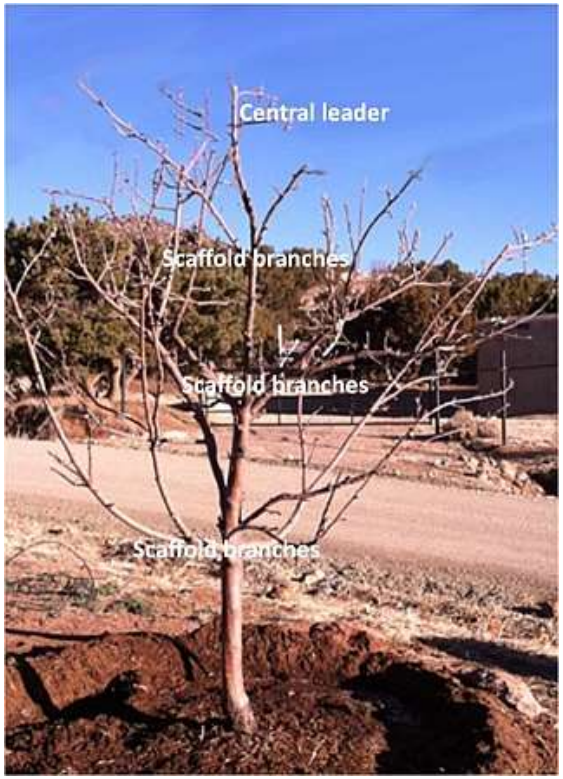
- Grapes –
  - Victoria Red, Champanel, Black Spanish, Blanc du Bios
- Pecans –
  - Desirable (I)ss, Pawnee (I)ss, Kanza (II)
- Peaches –
  - Harvester, Majestic, Redskin
- Plums –
  - Morris

Varieties for North Texas

- Persimmons –
  - Eureka, hachiya, Tane-nashi, Tamopan, Fuyu, Izu, Fanko
- Pomegranates –
  - Al-sirin-nar, Salavatski, Russian 18.
- Raspberries –
  - Dorman Red
- Strawberries –
  - Chander, Seascape, Oso Grande, Sequoia

Benefits of Pruning and Training

- Benefits:
  - Sunlight Penetration into canopy
  - Size Control
  - Easier to harvest
  - Fruit Load management
  - Encourage proper branching for strength
  - Manage Vigor
  - Reduce Injury
  - Increased air flow for reduce disease
  - Sanitation: Remove disease



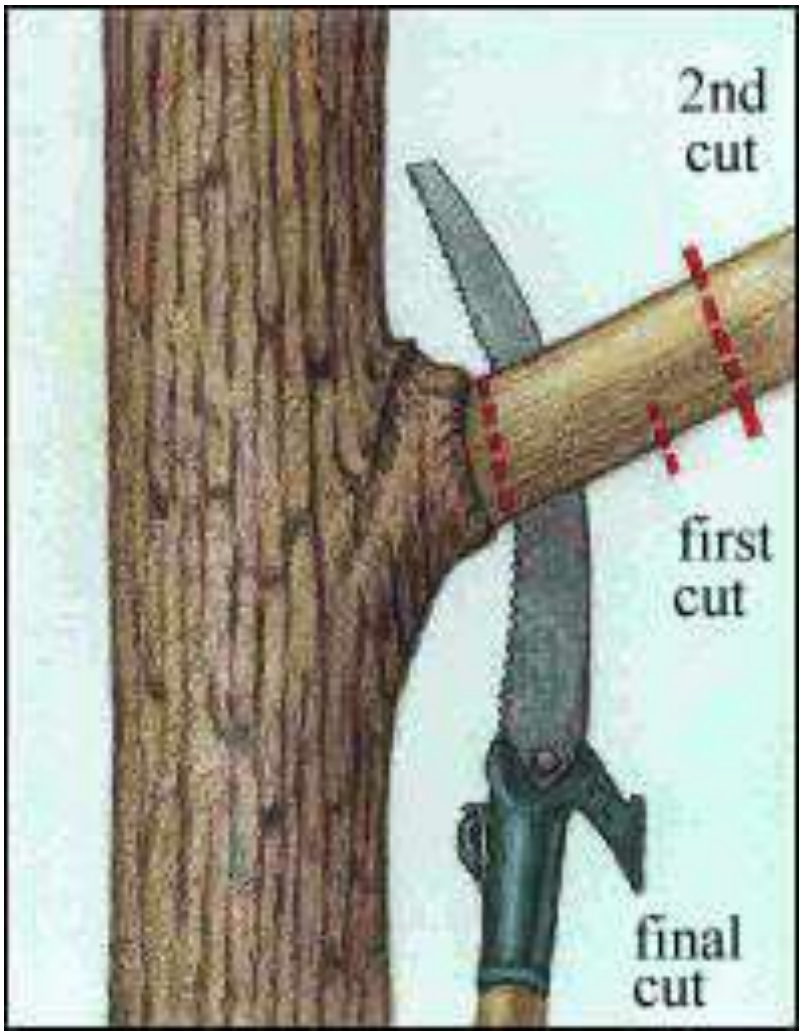
Art and Science of Pruning

- The science of pruning a tree means being aware of how light affects its growth, and how its structure develops over time.
- aim for a tree that is well balanced between growth and production, easy to manage, and open to the light and air.
- Think of it as a living sculpture, with many light channels flowing throughout its structure
  - By **Gary Moulton & Jacky King, WSU**
  - http://extension.wsu.edu/maritimefruit/Pages/PruningBasics.aspx

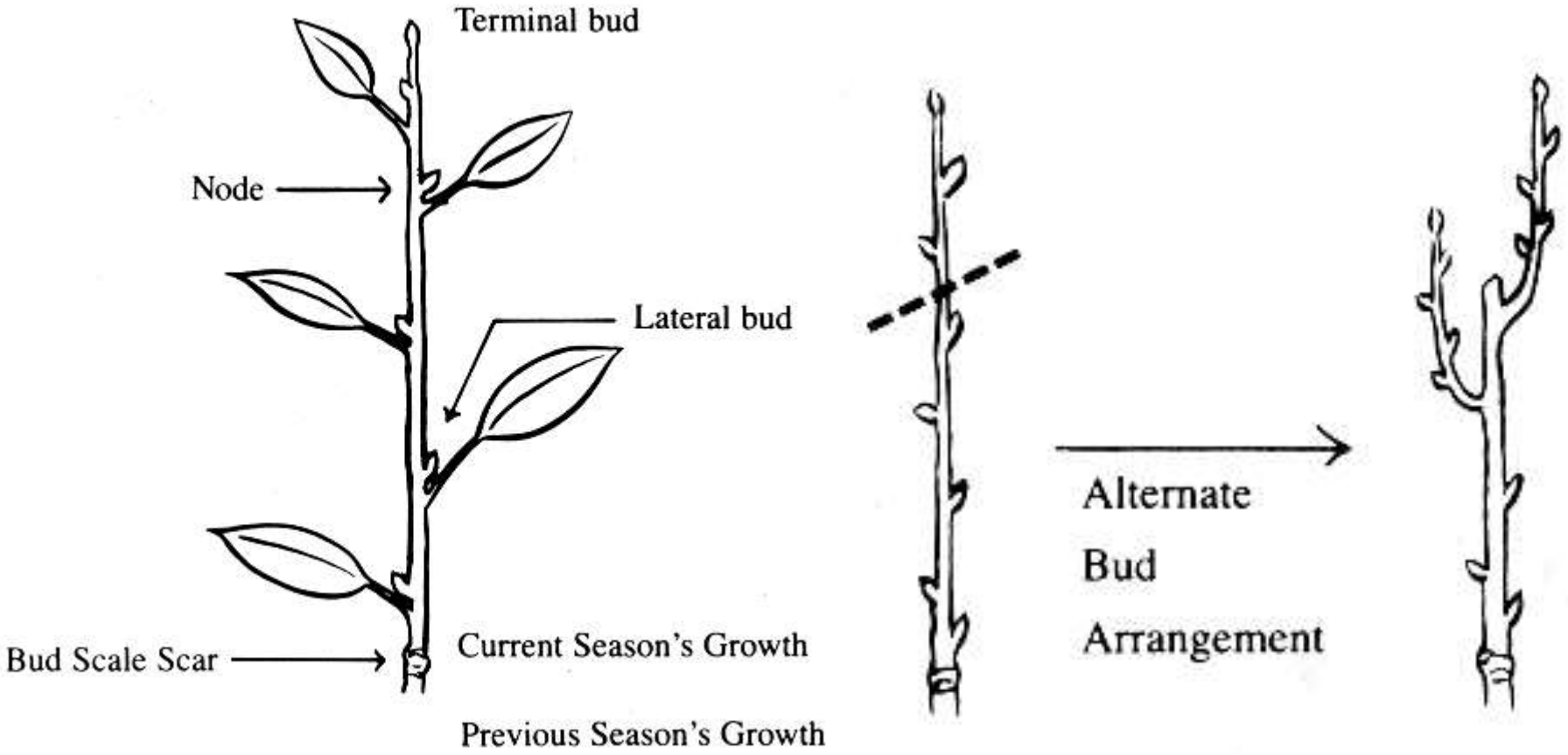
Tools for pruning


UGA5046006

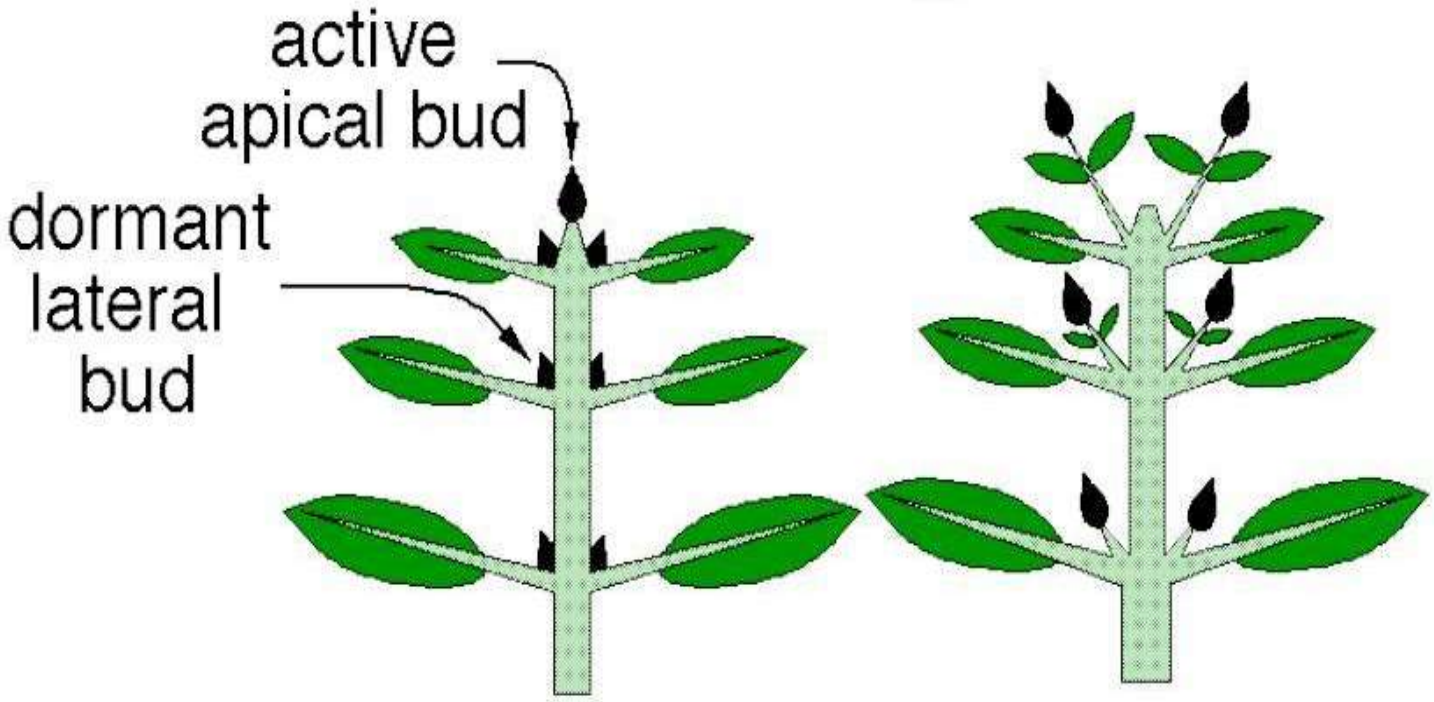
Pruning Large Branches



Effect of Pruning on growth



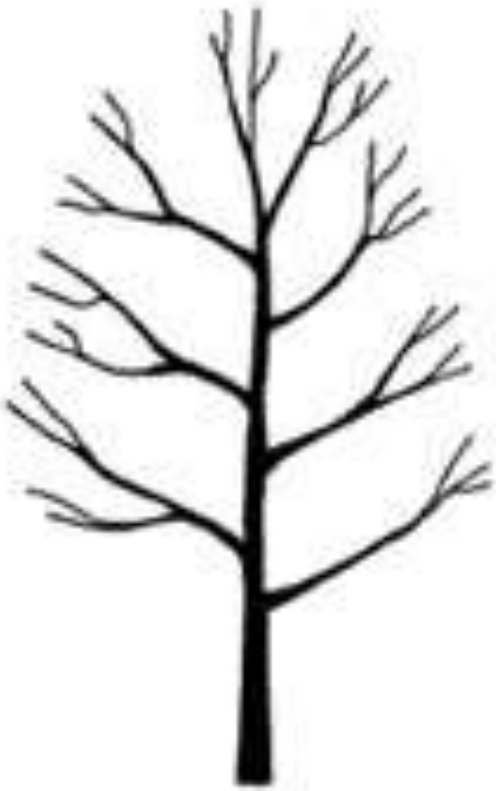
Effect of Pruning on growth



Pruning and Training Methods

- Open Center
- Central Leader
- Modified Central Leader
- Fruit Bush
- Trellis
- Cane, Spur, Cordon, ETC.
- Thin Center
- Other Methods specific for the Fruit Crop

Pruning and Training Methods



Central leader

Modified
central leader

Open center or
vase shape

Fruit Tree Pruning Techniques

Open Center

- Peaches
- Plums
- Nectarines
- Apricots
- Almonds
- Cherries

Central Leader

- Apples
- Pears
- Mayhaws
- Pecans
- Persimmons

Training And Pruning
Open Center

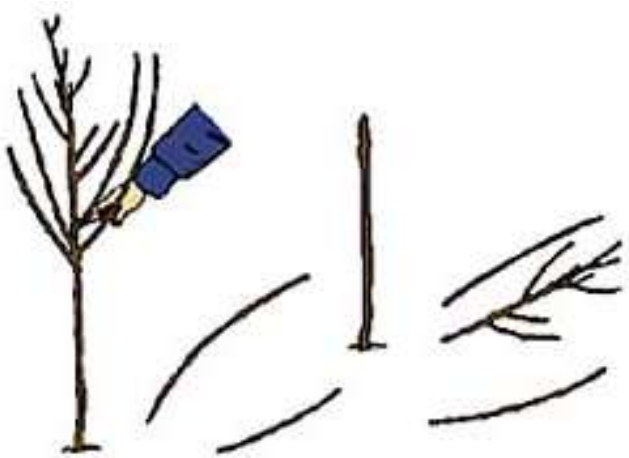


Figure 4. Remove all side shoots at planting.

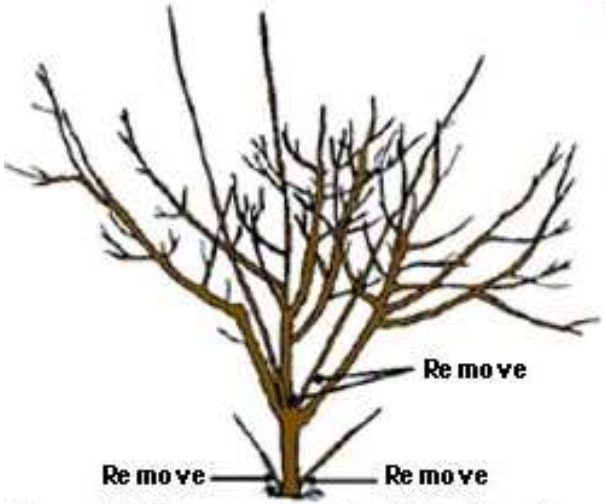


Figure 5. Open system training involves developing a strong open center framework in the first 2 or 3 years.

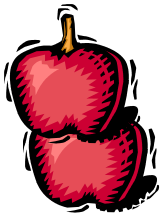
Figure 6. The shape of the open system must be maintained throughout the life of the tree.

Plant a stick that is ~24 inches tall

Stone fruit trees produce flowers on one year old wood, so leave one year old wood throughout the tree.

- Late freezes can reduce flower numbers

Central Leader



Apples

Pears

Pecans

Persimmons

Pruning Central Leader

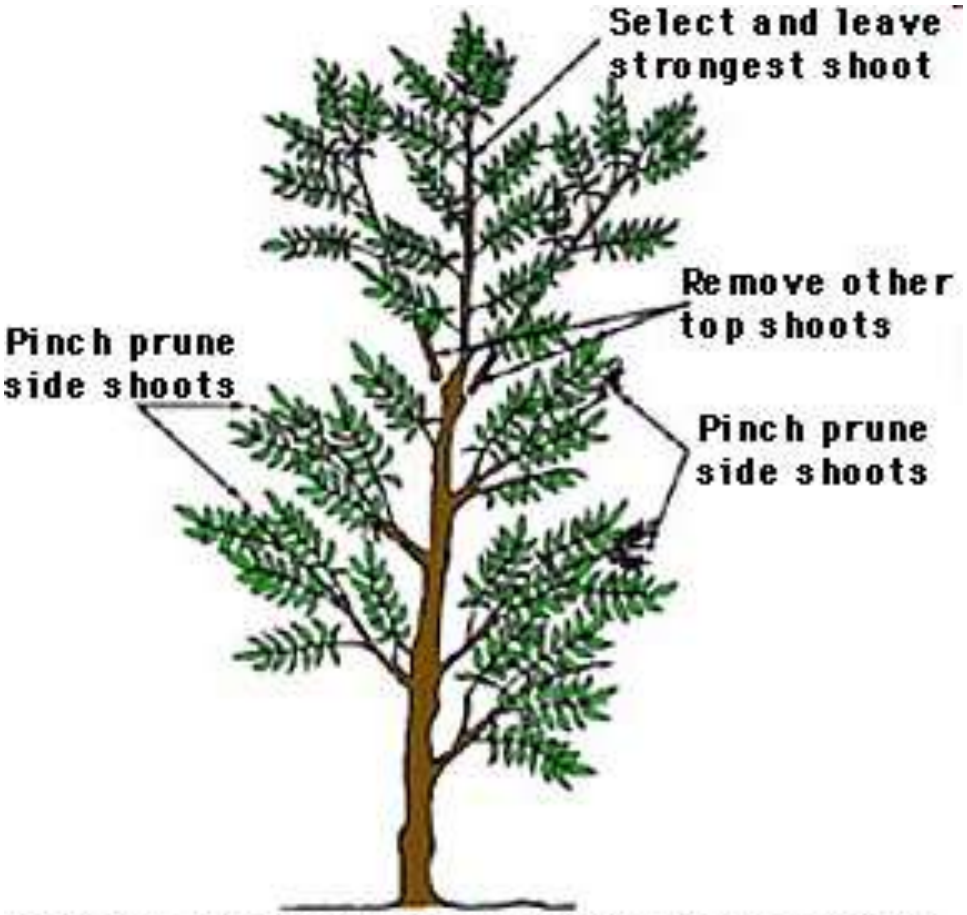
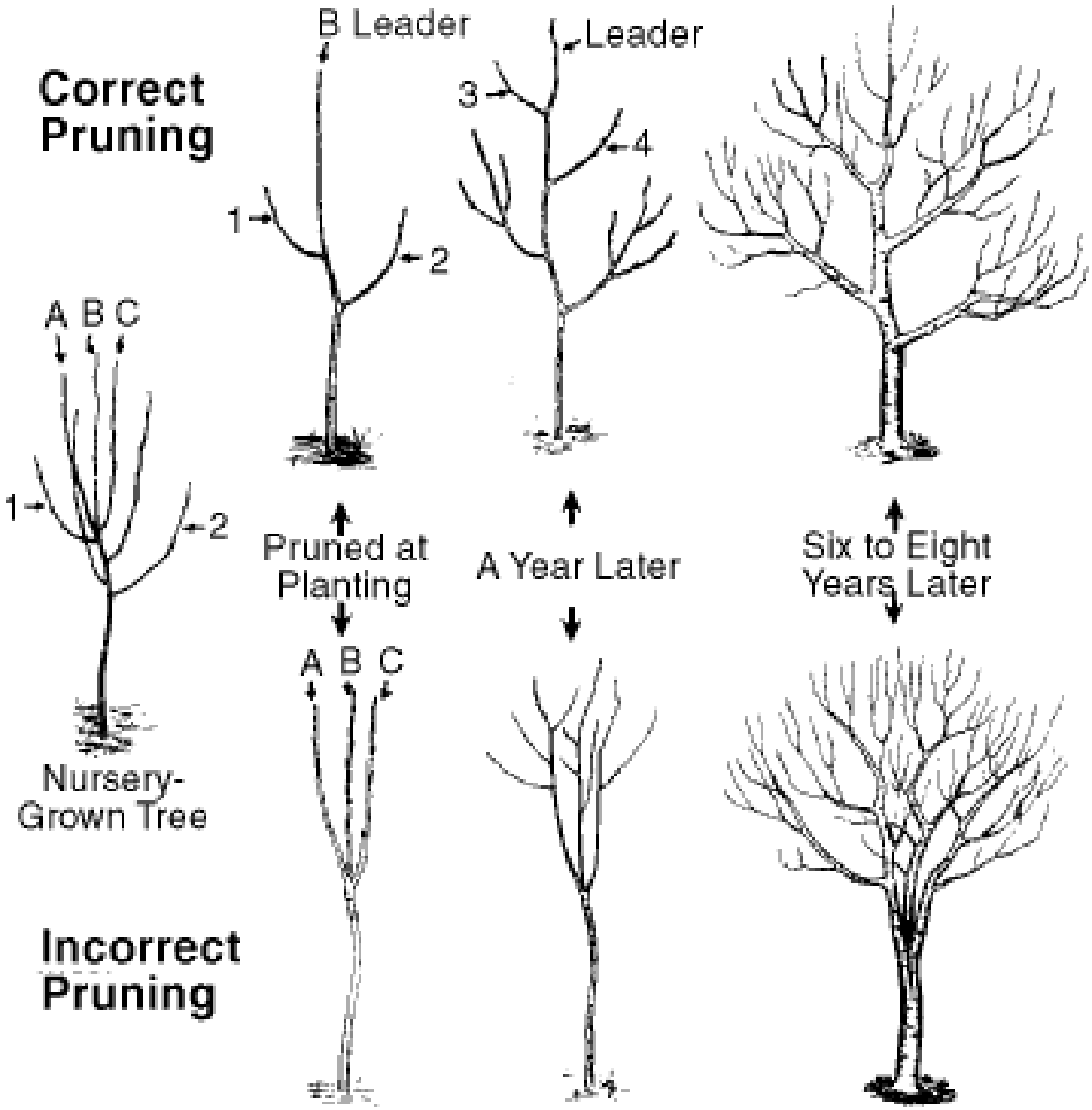
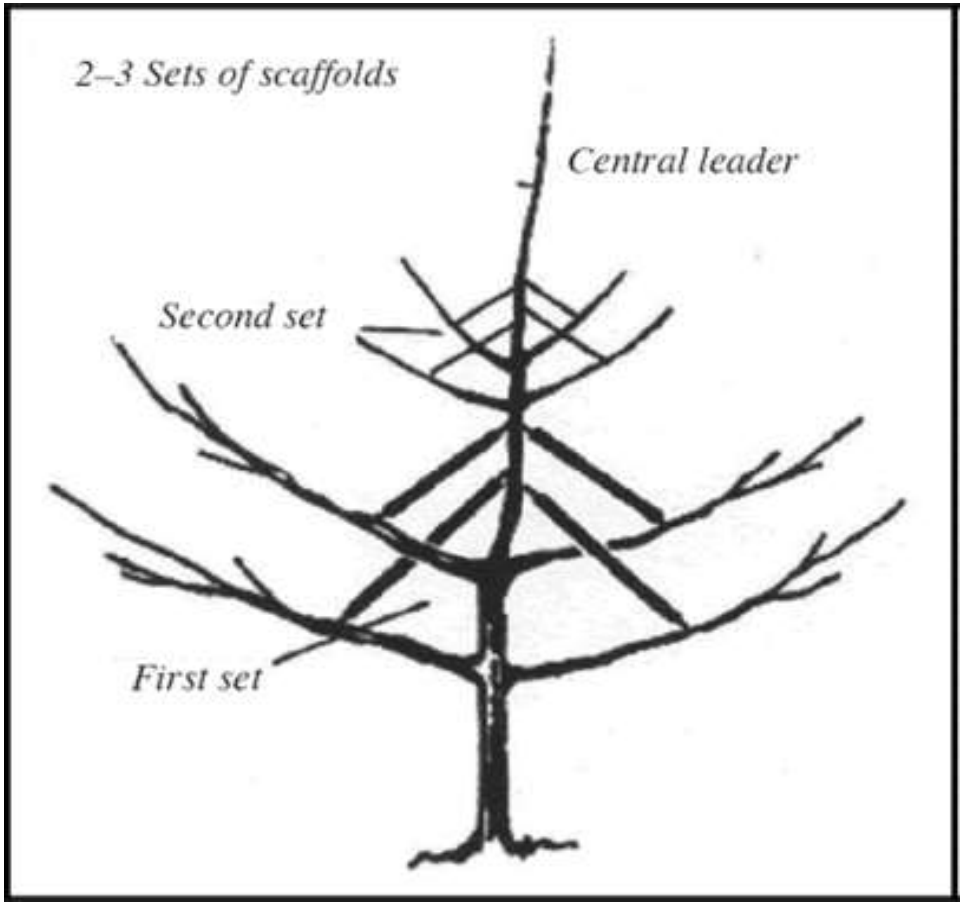
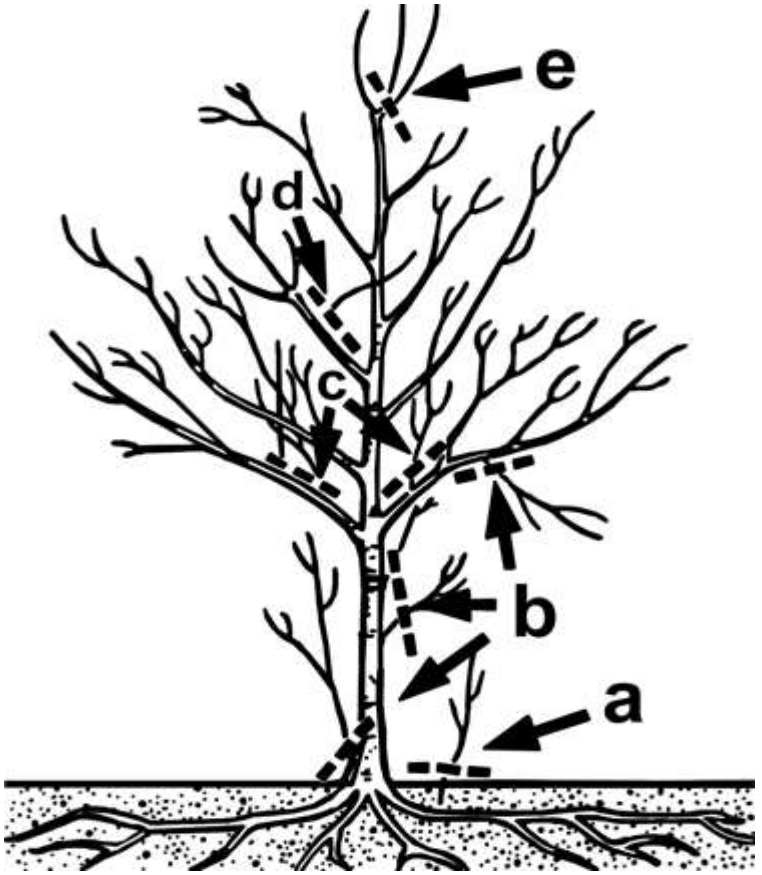


Figure 7. Central leader pruning is generally used for pecans, apples and pears. A central trunk supports scaffold branches with wide-angle crotches.


Correct Pruning
B Leader
Leader
A B C
1
2
3
4
Nursery-Grown Tree
Pruned at Planting
A Year Later
Six to Eight Years Later
A B C
Incorrect Pruning


2–3 Sets of scaffolds
Central leader
Second set
First set


e
d
c
b
a

Thinning Fruit Trees

- Increases size
- Keeps the tree from breaking

Fruit Thinning

- Peaches/Nectarines
  - 4 to 6 inches apart.
- Apples/Pears
  - 1 to 2 fruit per cluster.
- Plums/Apricots
  - 2 to 3 inches apart.
- Persimmons
  - 1 fruit per shoot.
- No thinning required for most other fruit.

Fruit Bush - Figs

Fruit Bush - Figs

Fruit Bush – Pomegranates

Grapes

Pruning and Training

- one-year-old bud on a vine will produce a shoot that will produce one to two clusters of grapes
- leave 10 to 14 one-year-old buds on each side of the trunk

Training And Pruning Grapes

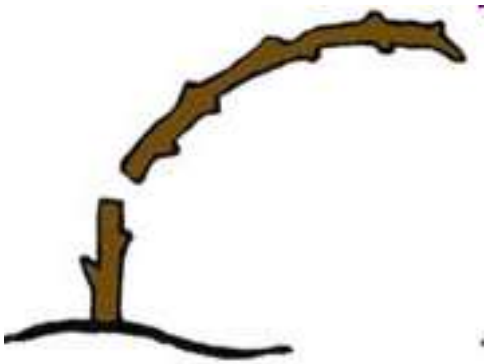


Figure 8. Prune severely at planting to only two buds.

Figure 9. Prune off all growth except the main shoot with two buds during the first winter.

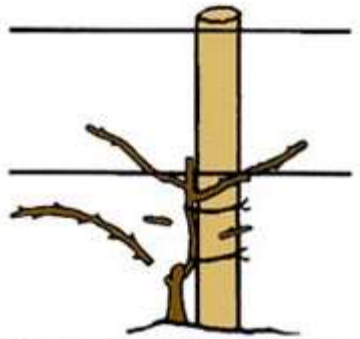


Figure 10. Train the most vigorous shoot to a stake during the second growing season, tying every 6 in. Cut the trunk shoot above the low (42-inch) wire to force lateral shoots to grow near this wire.

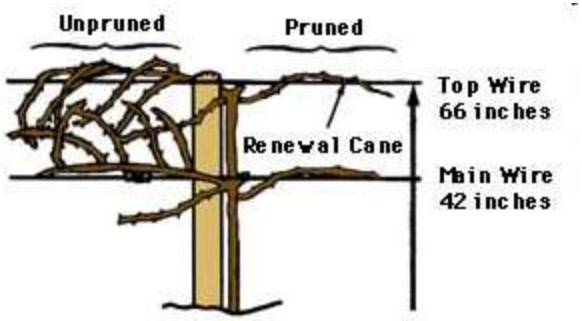


Figure 11. Cane pruning.

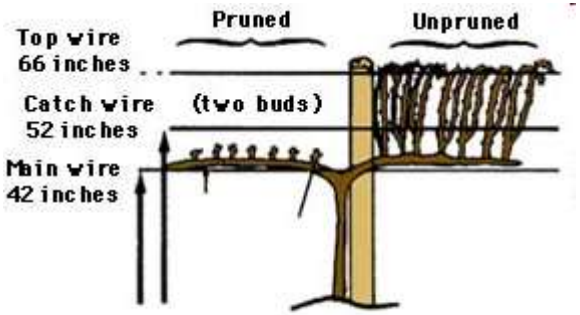
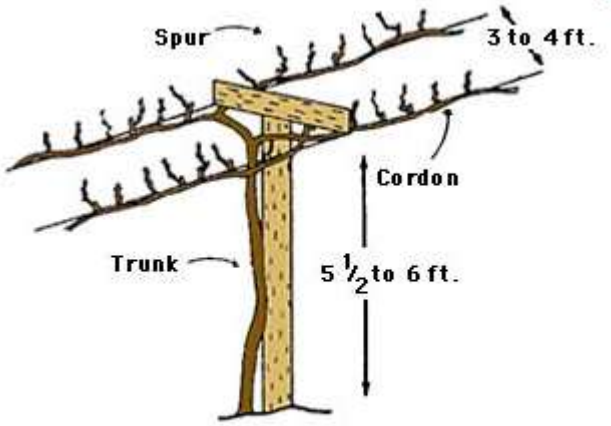


Figure 12. Cordon training.



Muscadine Pruning

Figure 13. Muscadine grapes should be trained on parallel spur-pruned cordons.


Before Pruning

After Pruning

One bud = one shoot = 1 to 2 clusters of grapes


Best arbor grape is Champanel


Another type of arbor

Training and Pruning Berries

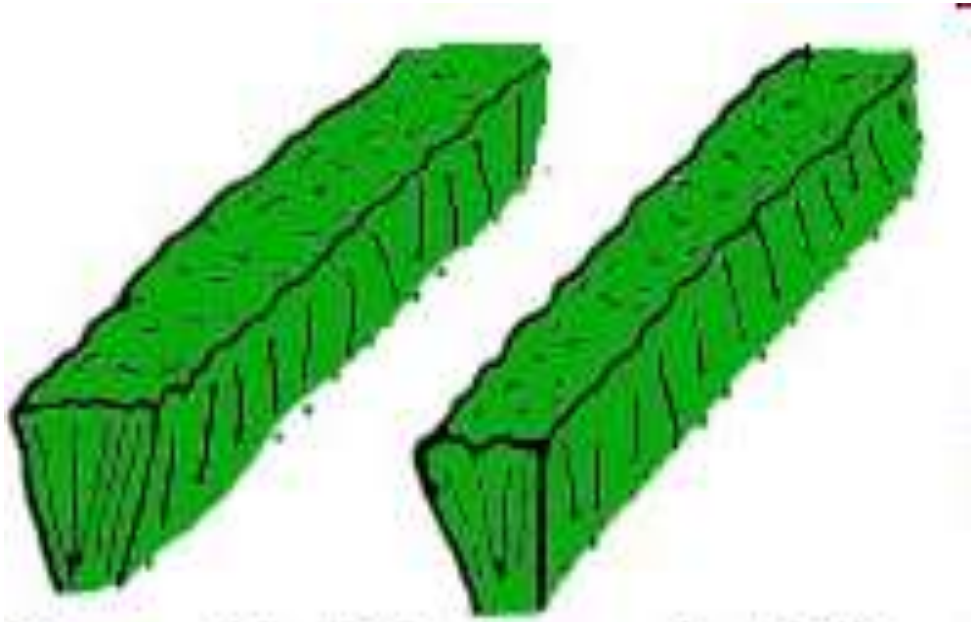


Figure 14. Clip berry plant tips to develop a compact hedgerow.

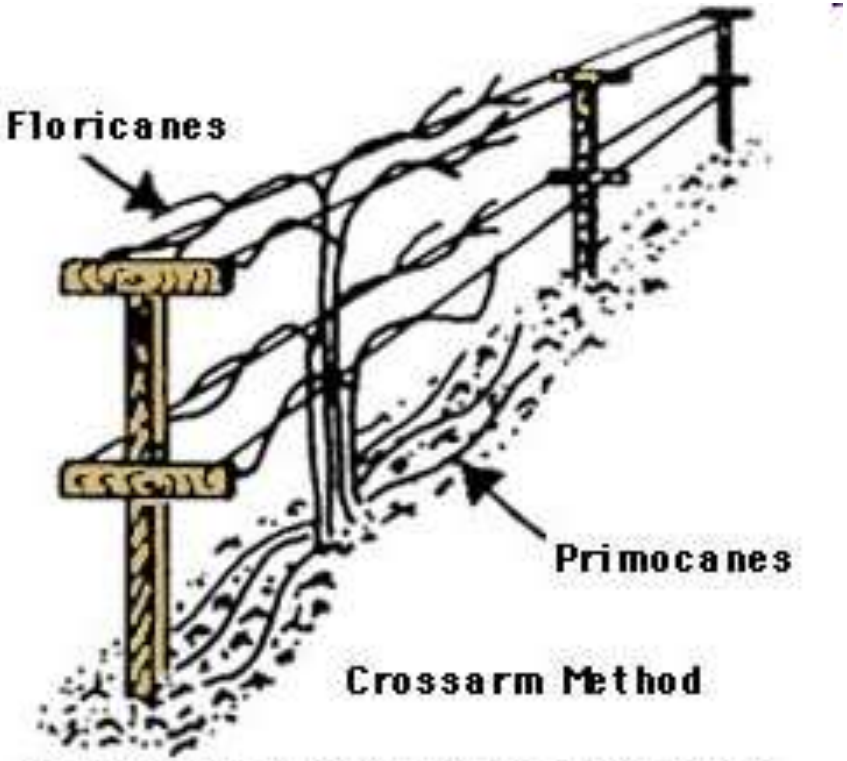


Figure 15. Trailing and semi-erect berries should be trellised for good sunlight exposure.

Biennial Plants

- Grow a top
- Fruit the next year
- Then the fruiting canes die

Remove old canes after fruiting


Erect
Blackberry

Prune to a hedge


Floricane
Raspberry
Prelude

Internet Resources

http://aggie-horticulture.tamu.edu

http://winegrapes.tamu.edu/

http://www.noble.org

http://vfic.tamu.edu/

http://agrilifebookstore.org/

http://Collin.agrilife.org

http://ccmgatx.org

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