



Perform specialist amenity pruning

AHCPGD303A

By the end of this topic, you should be able to:

- Prepare for specialist amenity pruning
- Undertake specialist pruning
- Assess pruning quality

What is pruning?

- Trees and shrubs have varying growth habits and may, on occasion, need to be pruned. For example:
 - To change the plant's appearance and shape, height/spread, root system
 - Correction or control of growth
 - Increase growth and vigour
 - Providing ornamental effects or aesthetic appeal
 - Providing clearance for services, access or cultural practices
 - To improve the plant's health
 - Removing dead or diseased material
 - To control/improve quantity and quality of flowers and fruit

Plant pests

- Plants can be affected by a number of pests. For example:



Borers



Cowpea aphids



Cutworm



Citrus gall wasp



Leaf miners



Mealybugs



Rutherglen bug

Some pests are of such concern that you are legally required to report sightings to the Government

- Diseases in plants can be caused by micro-organisms, such as:

Bacteria	Fungi	Viruses	Nematodes
Causing: • Blights: Chlorosis, browning and death of plant tissues (e.g. leaves, branches, twigs or flowers) • Canker: Appearance of dead tissue • Galls: Swollen masses of abnormal tissue • Wilting: Loss of rigidity of non-woody parts of plants	Causing: • Canker: Appearance of dead tissue • Galls: Swollen masses of abnormal tissue • Ink spot: Causes blackening of leaves and flower stems • Mould/Mildew: White powdery spots • Rot: Decay roots, stems, wood flowers, and fruit • Rust: Brown pustules on the underside of leaves with yellow speckling on the upper leaf • Wilting: Loss of rigidity of non-woody parts of plants	Causing: • Canker: Appearance of dead tissue • Distortion • Scaling • Yellowing	May transmit and acquire viruses by feeding on infected roots

- The major and trace plant nutrients

Major	Trace
Nitrogen (N)	Copper (Cu)
Phosphorus (P)	Zinc (Zn)
Potassium (K)	Boron (B)
Sulfur (S)	Manganese (Mn)
Calcium (Ca)	Iron (Fe)
Magnesium (Mg)	Chlorine (Cl)
	Molybdenum (Mo)
	Sodium (Na)
	Cobalt (Co)
	Vanadium (V)
	Silicon (Si)

Plant nutrition deficiencies

- Many plant nutrient issues can be visually identified. For example:

Nutrient	Deficiency
Nitrogen	- General chlorosis of older leaves (i.e. entire leaf changing from green to yellow) - Plant is stunted and wilts in normal weather
Magnesium	- Interveinal chlorosis, veins remain green - Dropping of old leaves - Smaller, woodier fruits of poor colour



- Many plant nutrient issues can be visually identified. For example:

Nutrient	Deficiency
Potassium (Potash)	- Deformed, stunted leaves - Weak stems - Fruits drop prematurely - Poorly developed roots - Older leaves become a lighter green colour with scorched edges - Young leaves show interveinal chlorosis (i.e. yellowing between veins)
Iron	Leaves may turn pale yellow or white



Soil pH

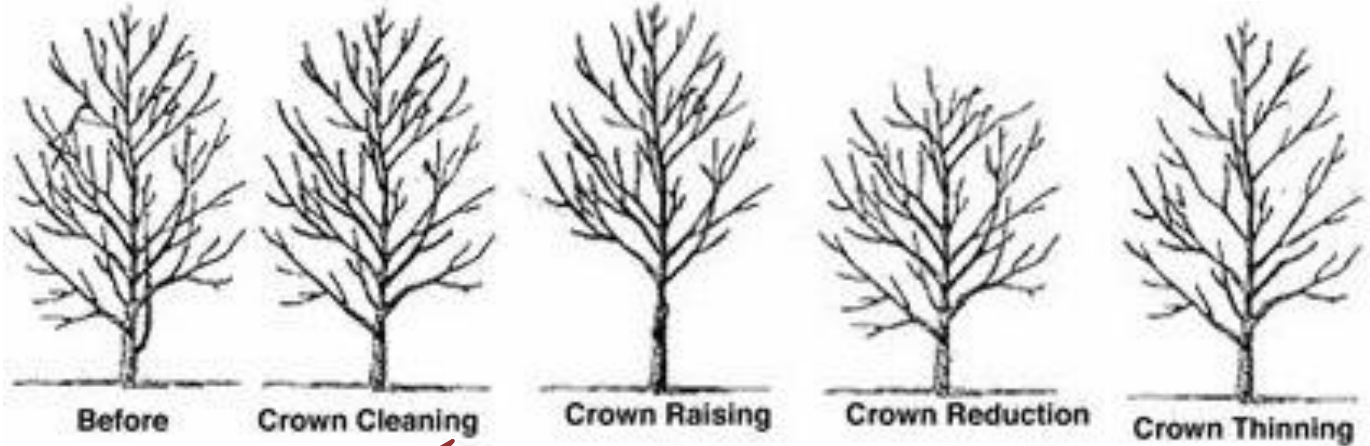
- Soil pH is a measure of the acidity or alkalinity in soils
 - You can test soil/media pH yourself using an over-the-counter kit or meter



- Soil pH affects plant nutrition
 - Having the correct soil pH is important for healthy plant growth
 - Soil pH affects the amount of a particular nutrient that can be taken up by plant roots

What is pruning?

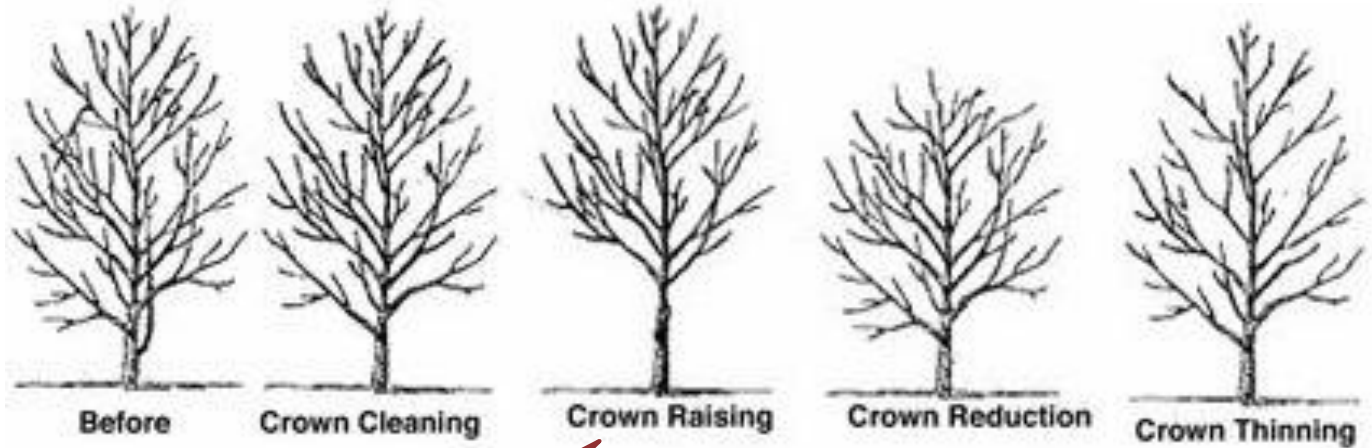
- There are a range of specialist pruning methods:



Removal of diseased,
damaged or dead
branches.

What is pruning?

- There are a range of specialist pruning methods:



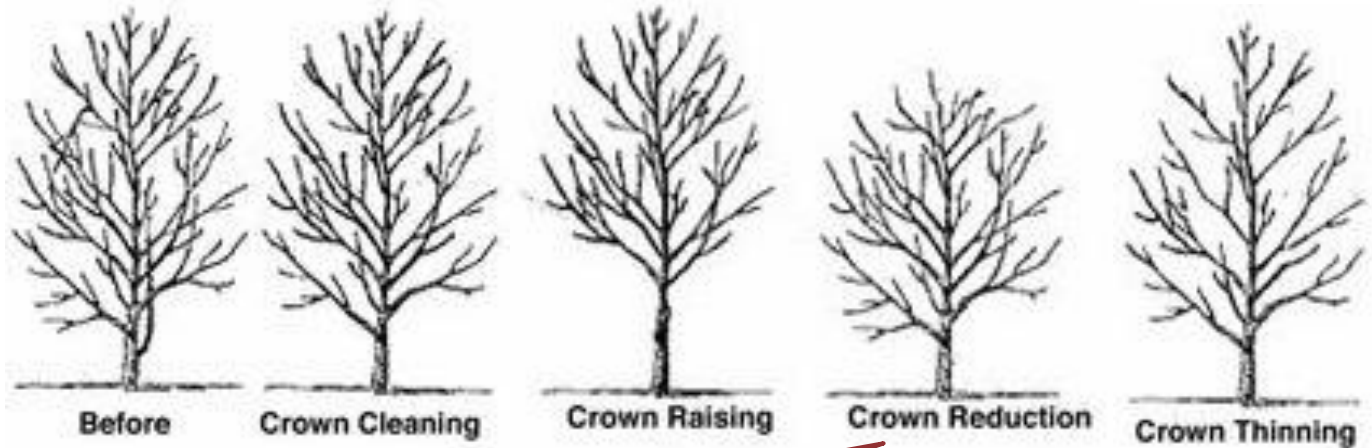
Removal of lower branches from the main stem up to a specified height.

TIPS

- Maintain live branches on at least 2/3 of a tree's height. Removing too many branches may prevent the tree from developing a strong stem.

What is pruning?

- There are a range of specialist pruning methods:



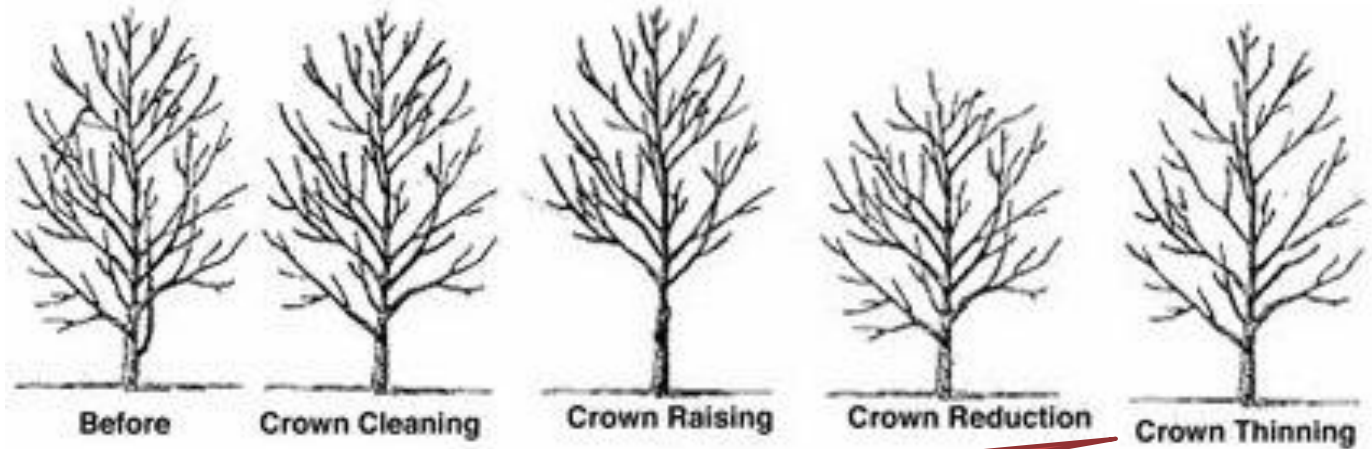
Shortening of branches to maintain height and spread proportions.
Allows retention of tree in a confined space.
Enhances fruit quality.

TIPS

- If you need to remove more than half of the foliage from a branch, just remove the whole branch.
- Only reduce the crown if really necessary.

What is pruning?

- There are a range of specialist pruning methods:



Reduction in foliage density to increase light penetration and air movement (without any reduction of height).

TIPS

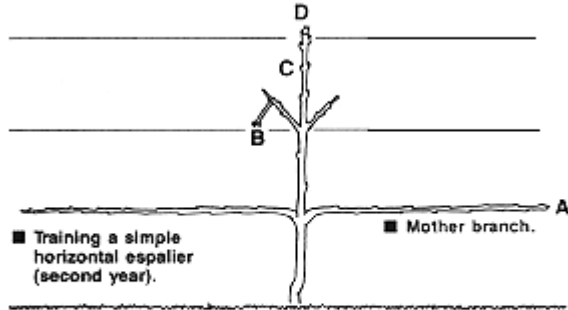
- Keep lateral branches as evenly spaced as possible
- Prune away branches that cross other branches
- Never remove more than 1/4 of a living crown at once

What is pruning?

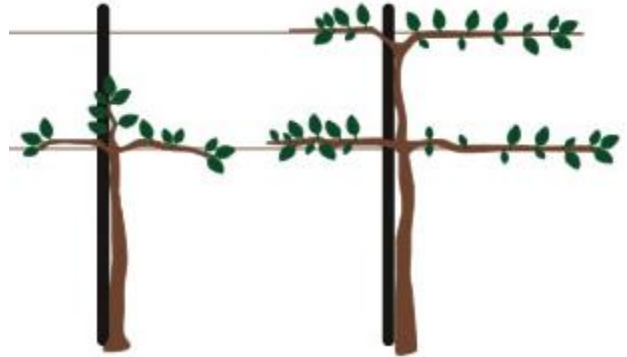
- There are a range of specialist pruning methods:

Espalier pruning trains plants to grow along a wall or fence.

Apples, pears, apricots, plums, cherries, almonds and citrus can be espaliered, as well as ornamentals including crabapples, flowering cherries, flowering plums and cotoneasters.



- A — The first year growth along the first wire.
- B — The new shoots are tied down to the second wire.
- C — The trunk proceeds to the third wire.
- D — The top bud grows to the next wire (using 3-bud system).



What is pruning?

- There are a range of specialist pruning methods:

Removal of epicormic growth (shoots arising from activated buds)



Topiary – Clipping of shrubs or trees into ornamental shapes



Bonsai – Growing of trees in containers (roots and top growth are pruned)



What is pruning?

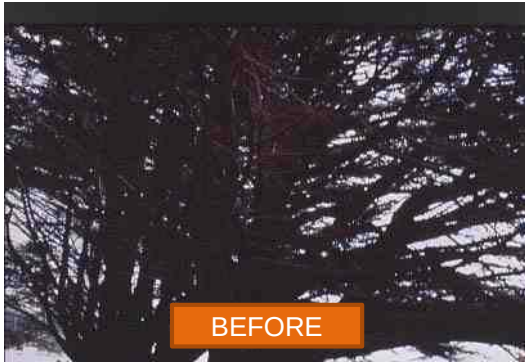
- There are a range of specialist pruning methods:

Dead wooding is the removal of dead limbs and branches from a tree.

Light deficiency, pests and disease damage are all reasons why branches can die off.

Dead wooding should be carried out for safety reasons, as dead branches will eventually fall off.

It can be carried out at any time of the year, though not when the trees is coming into leaf.



- To prepare for pruning tasks, you should familiarise yourself with the following:
 - Task requirements
 - Identify plants that require pruning according to the pruning program and directions
 - Confirm pruning method to be used with the supervisor
 - Apply active listening when receiving instructions
 - Clarify any unclear instructions with your supervisor

- To prepare for pruning tasks, you should familiarise yourself with the following:
 - **Workplace information**
 - This may be site-specific information, such as a site safety plan
 - Laws applicable to your workplace, such as:
 - Acts [e.g. *Work Health and Safety Act 2011* (Qld)]
 - Regulations [e.g. *Work Health and Safety Regulation 2011* (Qld); Local government tree protection and preservation regulations]
 - Codes of Practice [e.g. *How to Manage Work Health and Safety Risks Code of Practice 2011* (Qld); *Hazardous Manual Tasks Code of Practice 2011* (Qld)]
 - Applicable Standards, including:
 - AS 4373 which addresses pruning of amenity trees, including:
 - Considerations before pruning
 - Pruning procedures and unacceptable practices
 - Reducing the risk of branch failure, pathogen infection and premature death

- As an example, the [Brisbane City Council](#) has regulations for the following types of vegetation:

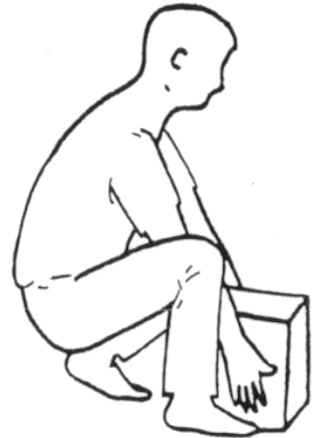
Type	Description
Council vegetation	Vegetation on land/premises owned/controlled/occupied by Council (e.g. footpaths, parks)
Waterway and wetlands vegetation	Natural or man-made waterways (including fresh and salt water)
Significant native vegetation	Naturally occurring local plant species which are indigenous to Brisbane – from small ground covers and grasses to large trees
Significant urban vegetation	Trees considered rare and of environmental, cultural or historical significance

- To prepare for pruning tasks, you should familiarise yourself with the following:
 - **Work area**
 - Identify any WHS hazards (e.g. injuries to your person, heat stroke, sunburn, injuries from equipment, large limbs twisting/dropping, plants with thorns/spines, allergies)
 - Consider 'PDP': People, Direction and Plants
 - Rectify and/or report hazards to your supervisor within a timely fashion – especially emergency situations

Preparing for pruning

- To prepare for pruning tasks, you should familiarise yourself with the following:
 - Available PPE, tools and equipment
 - PPE may include: Gloves, protective clothing, wide brimmed hat, work boots, eye protection
 - Safety equipment may include: Barricades and signage to warn others of dangers
 - Tools and equipment may include:
 - Aerial pruners, extension or pole pruners – High branches
 - Chainsaw – Large tree branches, Epicormic growth (if using extreme care)
 - Handsaw – Tree/Shrub branches (varying sizes), Epicormic growth, Roses, Shrubs, Vines
 - Loppers – Tree/Shrub branches (varying sizes), Hedges, Roses, Shrubs, Vines
 - Secateurs – Tree/Shrub branches (smaller sizes), Epicormic growth, Roses, Vines, Tip pruning
 - Shears – Hedges, Shrubs, Topiary
 - Ensure they are appropriately selected, prepared and used for the task (e.g. pre-operational and safety checks), following the operator's manual
 - Note: Secateurs have one side that cuts, the other side tears. Using them incorrectly can damage the plant. When using, the tear should be on the removed plant material.

- During pruning, you will be undertaking manual handling tasks
 - Be sure to follow appropriate procedures to avoid injury
- Ensure the following:
 - Neck is upright
 - Back has natural curve
 - Feet are flat and facing the load
 - Shoulders are level
 - Knees are bent
 - Hands have a good grip around the load



- There are a range of plants that require specialist amenity pruning, such as:
 - Fruit trees
 - Fruit vines (e.g. grapes)
 - Hedges
 - Ornamental trees and shrubs
 - Roses
- Pruning requirements differ from plant to plant and each species has a particular time of the year that is best for pruning
 - You may consult an arborist to determining best pruning strategies for special trees, shrubs and vines.

Pruning requirements: Fruit trees

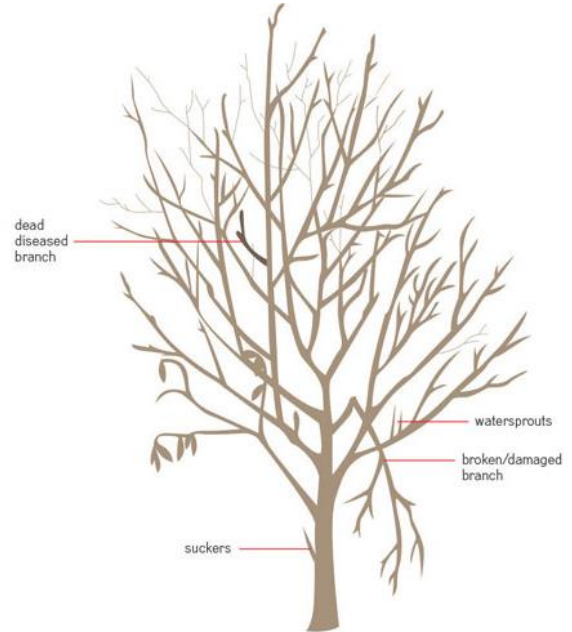
- Winter is the best time to prune deciduous fruit trees such as apples, pears and plums
 - This allows you to see what you are doing
- Remove and clear the clutter within the tree
 - Aim for a nice, open framework
 - Avoid too many competing branches, because it won't fruit properly

Follow three steps
Clean up | Thin out | Head back

Pruning requirements: Fruit trees

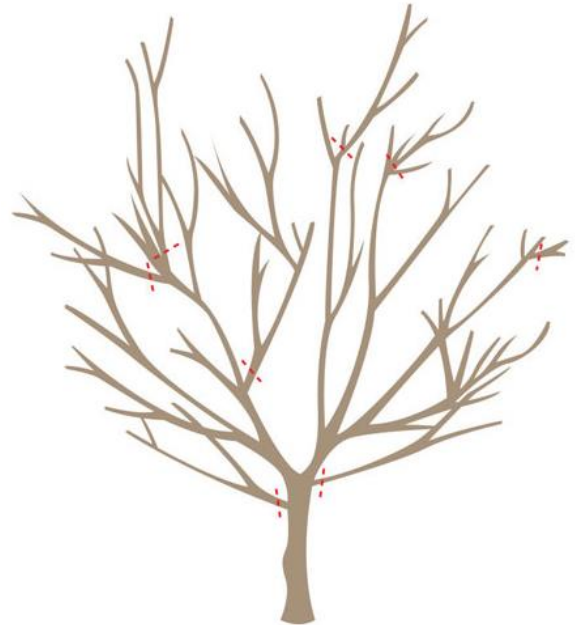
Follow three steps **Clean up** | Thin out | Head back

- Prune away any wood that is dead, damaged or diseased (Three Ds)
- Remove sprouts coming from the base of the trunk (i.e. suckers)
- Remove straight sprouts from main branches (i.e. watersprouts)
- Prune branches back flush to the larger limb – don't leave little stubs
- Ensure there is a clear 'leader' stem
 - A tree with two leaders causes problems, as heavy branches develop on the outside of the two main stems. This may cause the tree to split.



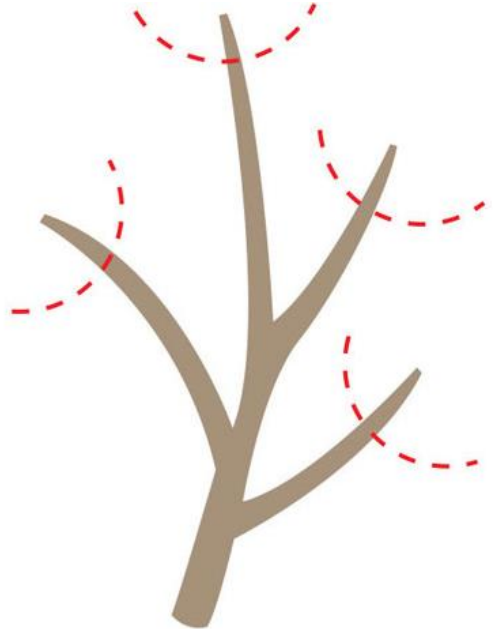
Follow three steps
Clean up | **Thin out** | Head back

- The goal is to allow light and air into the canopy – reduce competing branches
 - This will boost fruit production
 - This will reduce problems with pests and disease
- Have evenly splayed branches from the centre
 - Aim for 15-30cm of air space around each branch
- Ensure cuts are made flush to the branch



Follow three steps Clean up | Thin out | **Head back**

- Basically give the tree a haircut – cut off 20-30% of last year's growth
- Prune back the outermost growth of the tree
 - Branches will become shorter and thicker as they grow, rather than long and gangly
 - Keeps branches from snapping from the weight of the fruit
- Prune each branch back to a point half a centimetre above a bud that faces the direction you want the branch to grow in the coming year



Pruning requirements: Fruit vines

- Vine fruits (notably grapes) are pruned in winter by cutting away most of the vine that is not required for next season's growth
- Two pruning methods are:
 - Cane pruning
 - The pruner selects two or four shoots (canes) from the previous season and trains them along the trellis wires
 - The other canes are removed, and new shoots sprout from the buds on the selected canes in spring
 - Spur pruning
 - Done on vines that retain one or two pairs of long canes (a permanent cordon) trained along a trellis system
 - Each winter, new canes that have grown along the permanent cordon are cut back to a small shoot containing two buds (known as a spur)
 - In spring, new growth develops from the buds on the spur

Pruning requirements: Fruit vines

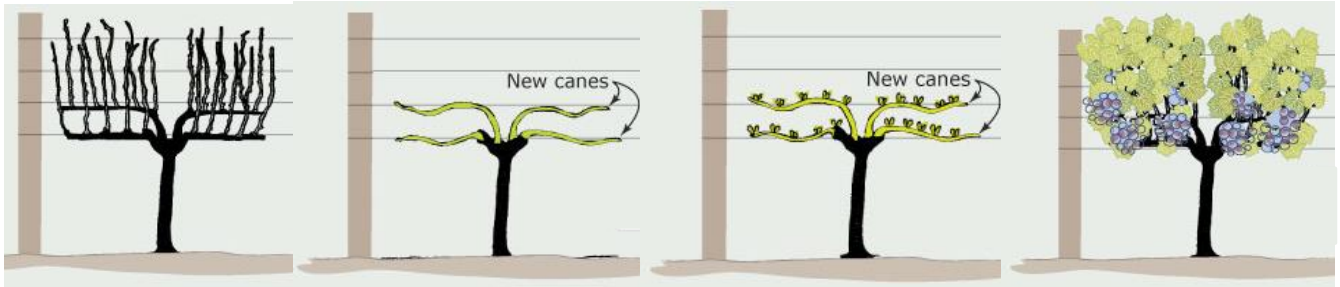
- Cane pruning

WINTER
(before pruning)

WINTER
(after pruning)

SPRING
(bud burst)

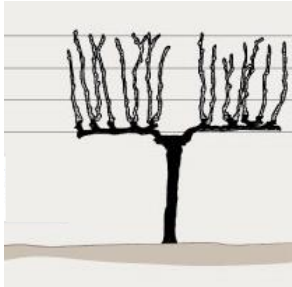
SUMMER
(mature canopy)



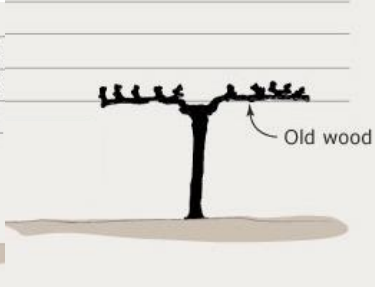
Pruning requirements: Fruit vines

- Spur pruning

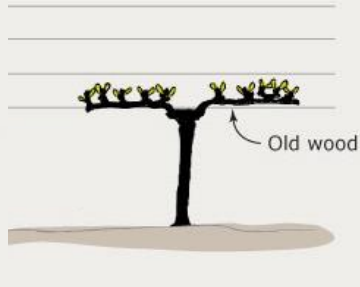
WINTER
(before pruning)



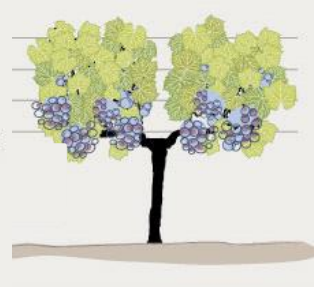
WINTER
(after pruning)



SPRING
(bud burst)



SUMMER
(mature canopy)



- A hedge must be regularly pruned
 - Most hedges need trimming at least twice a year, but some need as many as three and four trimmings a year (depending on the climate and aspect)
- Never try to make a hedge reach the desired height in a single season or it will be thin and open at the base
 - To develop a hedge that is well-filled at the base, always trim so that the base is wider than the top
 - If the top is allowed to become wider than the base, the base will become thin and open as lower branches are shaded out

Pruning: Hedges

IDEAL

Maintain hedges wider at the base than at the top



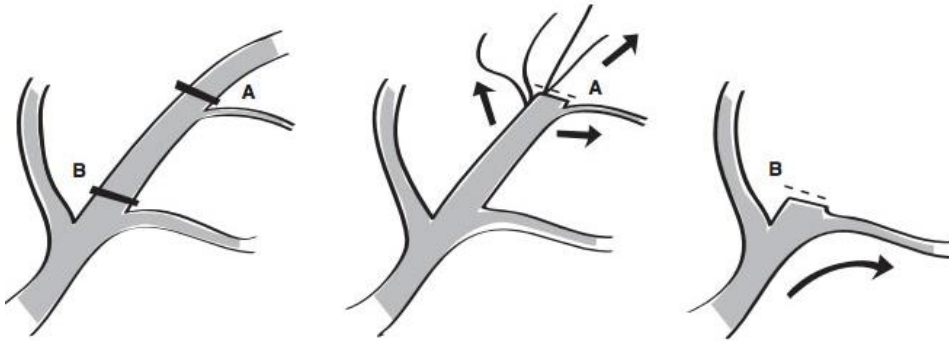
NOT IDEAL

Hedges allowed to become wider at the top become thin and open

- Pruning ornamental trees mostly involves thinning to:
 - Enhance natural branching patterns
 - Open up views to trunks
 - Reduce overall density
 - Try not to remove more than 1/4 to 1/3 of the crown in any one year – more may cause over-sprouting.
- Best pruning times (which is dependent on the plant type)
 - Winter: Any time between total leaf fall and opening of first spring buds
 - Summer: After leaves are full size
 - Flowering trees: Soon after flowering

Pruning requirements: Ornamental trees

- Follow the half-diameter principle when pruning branches:
 - Redirect future growth to a side branch at least one half of the diameter of the branch you're cutting



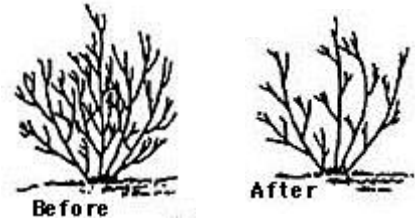
BAD: Cut **A** is above too small of a side branch: stimulates competing shoots, growth energy in many directions.

BETTER: Cut **B** is above a larger side branch (at least half diameter): directs future growth energy into that branch.

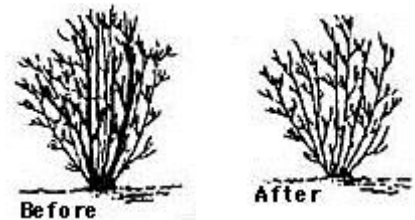
Pruning requirements: Ornamental shrubs

- Pruning deciduous shrubs mostly involves:
 - **Thinning out:** Branches or twigs are cut off at their point of origin (either the parent stem or ground level).
 - This results in a more open plant.
 - It does not stimulate excessive new growth, but does allow room for side branch growth
 - **Gradual renewal:** A few of the oldest and tallest branches are removed at ground level (or slightly above)
 - **Rejuvenation pruning:** Remove one-third of the oldest, tallest branches at ground level (or slightly above) before new growth starts

Thinning out



Gradual renewal



- Roses need pruning at least twice a year
 - Summer: Undertake dead-headings
 - Look for spent flowers and snip them off a few centimetres below the flower.
 - Winter: Encourage solid new growth
 - Totally remove dead branches
 - Open up the centre of the bush to circulate more air
 - Only lightly prune water shoots (young growth), to produce more flowers
 - Prune from the top
 - Find an outward facing bud and cut about a 45 degree angle sloping away from the bud
 - If the cut slopes towards the bud, dew will collect and develop fungal disease

Pruning requirements: Roses



Correct

Water runs off easily.
Wound heals quickly



Wrong direction

Water will run onto bud causing rotting



Too close to bud

The bud may die



Too flat

Holds water which can rot bud



Too much stub

Die back occurs as wound doesn't heal easily. Infection can occur



Too large a wound

Infection enters wound easily

Undertaking pruning

- When pruning plants, you should abide by the following:
 - When selecting tools, consider the location, climate, access and size of the material to be pruned
 - Always prune at an angle
 - When removing large or heavy tree branches, use a three-cut technique to prevent the weight of the branch tearing the bark below the cut
 - Try to minimise environmental disturbance
 - Follow directions given to you by your supervisor
 - Follow recognised procedures (e.g. AS 4373-2007)

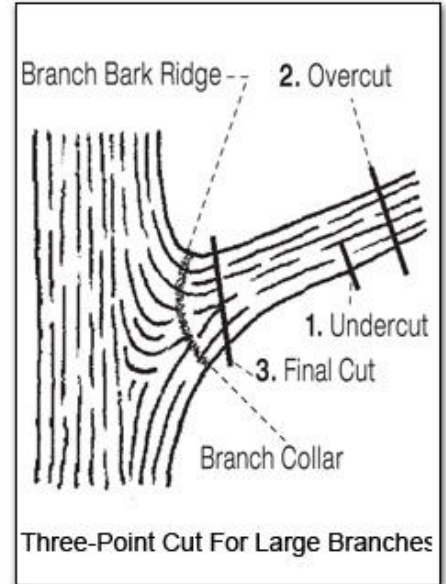


Photo credit: Linda Lucz

Undertaking pruning

- When pruning plants, you should be mindful of the following:
 - Know when/if a plant flowers or fruits – this will affect the time of pruning
 - Also know whether flowering occurs on new or old wood – this will affect pruning techniques
 - You may have to apply mastic to stop trunks from being sunburnt (especially those that are newly exposed to light)
 - This will decrease the chance of damage from pests and diseases
 - If pruning a grafted plant (e.g. roses and fruit), be sure to prune any new growth below the graft
 - Target cutting to prevent disease – achieving compartmentalisation of decay in trees (CODIT)
 - How effectively a tree responds to pruning wounds is determined by the cut size and position
 - If it is too close to the trunk, the response is less effective and decay is likely
 - If a large branch is cut to a stub, decay will spread down the branch, weakening its structure

- After completing pruning tasks, review your work to determine if pruning requirements have been met:
 - Stand back and visually assess pruned plants to determine the quality of the pruning
- Where, required, undertake remedial work to ensure the pruning meets your objectives
 - For example, if the bark has been torn from a tree:
 - Reattach the lost tree bark (e.g. using tape) ensuring the bark is going in the same direction as before, as the phloem layer can only transport nutrients in one direction
 - If the bark cannot be retrieved, clean cut the wound by cutting an oval around the circumference of the damage. Let the wound air heal. Do not use sealant.

Completing pruning tasks

- As part of completing pruning tasks, you are required to complete the following practices:
 - Clean up the work area
 - The following equipment may be used: Blower vacuum, Gloves, Mulcher
 - Record and/or report your work outcomes to your supervisor and/or client
 - Be mindful of the backgrounds and abilities of those you are reporting to
 - Maintain, clean and store tools and equipment according to manufacturer's specifications
 - Sharpen tools, as necessary
 - Report faults that are discovered
 - Dispose of materials that cannot be reused or recycled
 - Be discerning with the plant material recycled into mulch. Don't risk the spread of disease.
 - Ensure that you follow the organisation's requirements for handling and disposing of waste