



CERTIFIED GARDENER
COLORADO STATE UNIVERSITY
EXTENSION



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

Green School Training Guide

Colorado Gardener Certificate
Colorado Master Gardener

**Reading & Homework List
Class Notes & Worksheets**

Readings, Homework & Worksheets

>> GARDENNOTES IS YOUR ONLINE REFERENCE MATERIAL FOR THIS COURSE.

Go to <http://ColoradoMasterGardener.org> > Green School > GardenNotes

Topic	GardenNotes Readings – not required, for reference	Homework Optional	Worksheets Optional, in-class
Soils, Fertilizers & Amendments	#211-215; #218-219; #221-224; #231-234; #241-246; #251		#252
Botany: How Plants Grow	#121, 122, 131-137, #141-145	#155	#151 #152
Tree Identification & Planting	#171-173; #177 #631-636	Tree Planting Crossword Puzzle	
Tree Care	#651- 659	Tree Care Crossword Puzzle	
IPM & Diagnostics	#101, #102	#105 IPM Crossword Puzzle	#103
Lawn Care/ Turf Management	#551-554; #561-566	Turf Management Crossword Puzzle	#571
Weed Management	#351, #352, #353		#356
Entomology	#311-315	#318	
Plant Pathology	#331	#332	
Colorado Gardening Challenges	Supplemental readings posted online.		

Green School Training Guide

Topic	GardenNotes Readings – not required, for reference	Homework Optional	Worksheets Optional, in-class
Vegetables	#711-724; #731		
Pruning	#611-617	#618	
Tree Fruit	#771		
Small Fruit	#761-764		
Irrigation Management	#261-268		

Class Notes: Soils, Fertilizers, Amendments

- ☐ Complete online class
- ☐ Review GardenNotes for this class (if desired)
- ☐ Complete worksheet (optional)
- ☐ Attend one weekly live review
- ☐ Complete quiz online in Canvas

----- Notes -----

Lesson 1: Introduction to Soils

Lesson 2: Soil Amendments

Class Notes: Soils, Fertilizers, Amendments

Lesson 3: Soil Compaction and Fertilizers



CMG GardenNotes #252

Worksheet: Soils Texture and Free Lime Practice Lab

1. Soil Texture by Feel

Identify the soil samples to coarse (sandy), medium or fine (clayey). Reference *The Science of Gardening*, page 89.

Soil Sample	Describe the feel: <ul style="list-style-type: none">Gritty = sand.Silk smooth = silt.Sticky = clay.	How long of a ribbon will form?	What is the soil texture? <ul style="list-style-type: none">Ribbons <1":<ul style="list-style-type: none">Feels gritty = coarse texture (sandy soil).Not gritty = medium texture (high in silt).Ribbons 1-2 inches:<ul style="list-style-type: none">Feels gritty = medium texture.Not gritty = fine texture.Ribbons >2" = fine texture clayey soil.
1			
2			
3			
Your soil.			

2. Soil Texture by Measurement

Using the jar method, determine the soil textural class for one of the samples. Does it match the feel test? Reference *The Science of Gardening*, page 87-88.

a. How long do you shake the bottle of soil?

b. When do you measure the sand, silt, and clay levels?

Sand _____ Silt _____ Clay _____

c. Determine the soil texture for the following samples:

		Depth of layer	Percent	Soil Textural Class (from <i>Soil Textural Triangle</i> , page 87)	Will this soil behave as a sandy or clayey soil?
Sample 1	Sand	3.0"			
	Silt	0.5"			
	Clay	1.5"			
	Total	5.0"			
Sample 2	Sand	3.5"			
	Silt	1"			
	Clay	0.5"			
	Total	5"			

3. Free Lime Test

On your soil sample, do a vinegar test for free lime (calcium carbonate). Reference *The Science of Gardening*, page 159 and 166-167.

a. Did it fizz (have high calcium carbonate)? Yes No

b. What does this indicate about your soil? Can you lower the pH?

Class Notes: Botany - How Plants Grow

- ☐ Complete online class
- ☐ Review GardenNotes for this class (if desired)
- ☐ Complete homework & worksheet (optional)
- ☐ Attend one weekly live review.
- ☐ Complete quiz online in Canvas

----- Notes -----

Lesson 1: Classification & Taxonomy

Lesson 2: Plant Structures

Class Notes: Botany - How Plants Grow

Lesson 3: Plant Growth



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #155

Homework: Botany

Answer the following questions based on content from the online class.

1. Why is it important to use scientific names for plants rather than only common names?
2. Why is it important for you as a Colorado Master Gardener to recognize plant families?
3. Why is winter watering important in Colorado?
4. How can a late spring frost or freeze affect plant growth and development?
5. What resources can you use to assist with plant ID?

BONUS QUESTION:

A client wants to plant drought-tolerant, deer-resistant perennials in their landscape which has full sun exposure. They have heard about Plant Select® and would like to use these if possible. Use the Plant Select website: <https://plantselect.org/?action=plants> to find 2-3 plants that might meet their needs. What did you find and what additional information would you need from the client to help them make a right plant, right place decision?



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #151

Worksheet: Plant Structures

The objective of this work sheet is to give students experience systematically looking at plant parts and connecting what they see with print information.

1. Flower Parts

Using your real flower specimen, locate the flower parts that are present. Not all flowers will have all parts present. Fill in the blanks below using the picture of a flower having all parts present, i.e., a perfect flower. Reference GN135, *Plant Structures: Flowers*.

NOTE: Brackets below (in picture) indicate collective structure.

☐ Anthers

☐ Calyx

☐ Corolla

☐ Filament

☐ Ovary

☐ Pedicel

☐ Petals

☐ Pistil

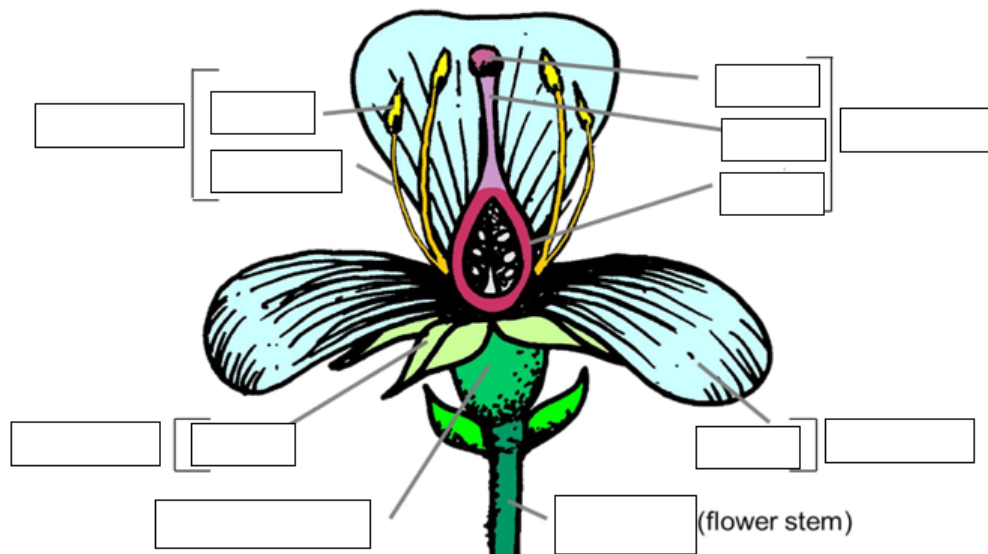
☐ Receptacle

☐ Sepals

☐ Stamen

☐ Stigma

☐ Style



BONUS: Based on GN136, what does a mature ovary look like on an apple tree?

2. Identify the Type of Flower

Use what you know about these flowers OR look them up to identify the inflorescence or flower arrangement on a stem. Reference GN135, *Plant Structures: Flowers*

Flower	Inflorescence Type
Allium	
Sunflower	
Foxglove	

Flower	Inflorescence Type
Achillea	
Poppy	
Calla Lily	

3. Identify the Type of Fruit

Use what you know about these fruits OR look them up to identify the fruit type. Reference GN136, *Plant Structures: Fruit*.

Fruit	Fruit Type
Apple	
Peach	

Fruit	Fruit Type
Tomato	
Raspberry	

4. Annual Growth

Use branch samples provided in class. Reference GN133, *Plant Structures: Stems*.

Examine young branches and twigs, looking for the annual growth increments (terminal bud scars). Based on the terminal bud scars, measure the annual growth for the past three years to the nearest inch.

NOTE: The annual growth rings are easy to read on some species and more difficult on other species.

Branch Sample 1	Branch Sample 2
New growth, season/year 1.	New growth, season/year 1.
Previous growth, season/year 2.	Previous growth, season/year 2.
Three years back, season/year 3.	Three years back, season/year 3.



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #152

Worksheet: Plant Processes #1

Photosynthesis/Transpiration

Suggested GardenNotes to reference: 132, *Plant Structures: Roots*, 134, *Plant Structures: Leaves*, 141 *Plant Physiology: Photosynthesis, Transpiration, and Respiration*, and 144 *Plant Growth Factors: Water*.

Situation/Symptoms

A homeowner calls about a tree in their yard that leafed out fine this spring. By late June, however, the leaves began to wilt, dry up, and are now falling. They just moved into the home last fall and do not know how the landscape was maintained prior. Other trees in the yard are showing similar symptoms. There has been prolonged drought in the area for the past two years.

Why are the leaves drying? Why were they fine this spring?

How does a prolonged drought interrupt the plant processes of photosynthesis and respiration?



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #152

Worksheet: Plant Processes #2

Respiration

Suggested GardenNotes to reference: 132, *Plant Structures: Roots*, 141 *Plant Physiology: Photosynthesis, Transpiration, and Respiration*, 214 *Estimating Soil Texture: Sandy, Loamy, or Clayey*, 215 *Soil Compaction*, 633 *The Science of Planting Trees*, and 636 *Tree Planting Steps*.

A homeowner planted a shade tree two years ago in a landscape with heavy clay soil. The tree has never thrived and is now showing dieback mostly in the lower canopy. They asked the advice of their neighbor, a Colorado Master Gardener, who noticed that the tree had been planted about six inches too deep and the homeowner has been watering daily trying to bring the tree back.

What is causing the dieback and what plant process is being interrupted?



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #152

Worksheet: Plant Processes #3

Growth Regulators/Hormones

Suggested GardenNotes to reference: 132, *Plant Structures: Roots*, 133 *Plant Structures: Stems*, 145 *Plant Growth Factors: Hormones* (most useful resource), 632 *Tree Selection: Right Plant, Right Place* (indirectly related, has info on different types of nursery stock; bare root, balled and burlapped, and container that might shed light on root growth of the tree after planting, depending on the nursery production method), 633 *The Science of Planting Trees* (indirectly related), 635 *Care of Recently Planted Trees* (indirectly related), 651 *Fertilizing Shade Trees*, and 659 *Understanding Tree Roots*.

Situation/Symptoms

A client planted a two-inch caliper, balled and burlapped shade tree three years ago but it still has not really taken off the way it should. They believe that did everything right when planting the tree including pruning some of the top of the tree to balance out the compromised root system.

Why hasn't the tree come out of transplant shock and put on more top growth and how are hormones affecting the tree's growth?

Does the tree need more fertilizer?

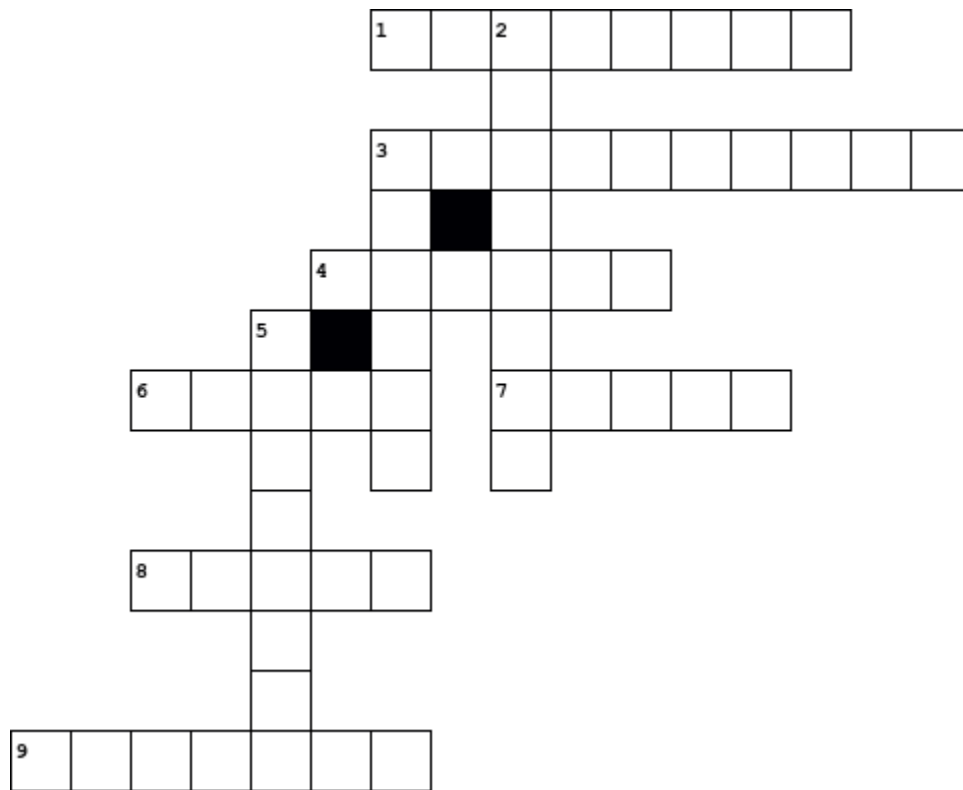
Class Notes: Tree Identification & Planting

- ☐ Complete online class (videos)
- ☐ Review GardenNotes for this class (if desired)
- ☐ Complete homework (optional)
- ☐ Attend one weekly live review
- ☐ Complete quiz online in Canvas

----- Notes -----

Class Notes: Tree Identification & Planting

CMG Tree Planting Crossword



Across

1. Keep both ____ and mulch off the top of the root ball following planting.
3. These are large roots that will help support the tree during establishment.
4. A B&B tree has this type of material on the outside, wrapped in wire.
6. The best way to remove circling roots is to ____ them off.
7. The crook of the graft union should point in this direction following planting.
8. Make the hole ____ times as wide as the root ball.
9. This container material is the most common.

Down

2. ____ roots are found on the outside of the root ball.
3. The planting hole should be ____-shaped.
5. This type of tree is sold in the early spring with no container or soil around the root system.

Class Notes: Care of Trees

- ☐ Complete online class (videos)
- ☐ Review GardenNotes for this class (if desired)
- ☐ Complete homework & worksheet (optional)
- ☐ Attend one weekly live review
- ☐ Complete quiz online in Canvas

----- Notes -----

Lesson 1: Overview & References

Lesson 2: Tree Size

Lesson 3: Mulch

Lesson 4: Staking

Lesson 5: Watering Trees

Class Notes: Care of Trees

Lesson 6: Tree Care During Drought

Lesson 7: Tree Wrap

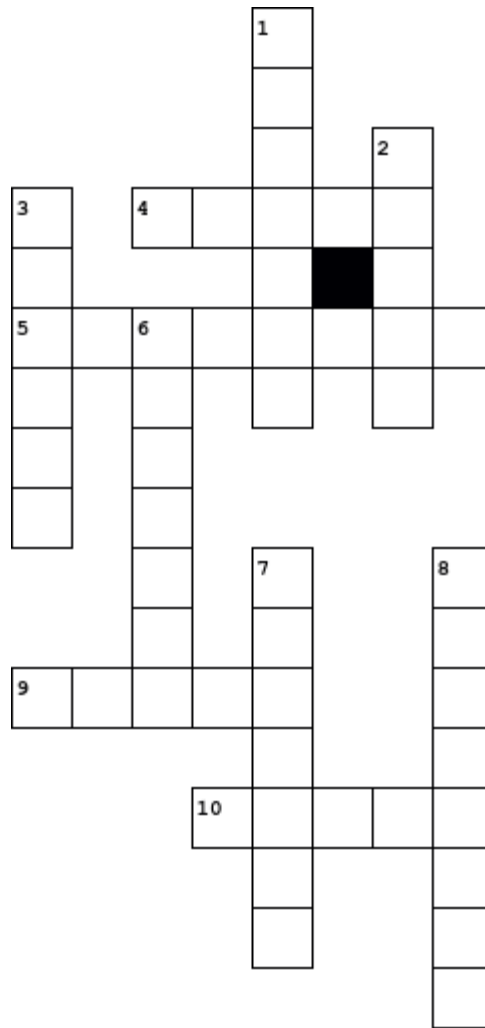
Lesson 8: Trees & Turf

Lesson 9: Herbicide Use Around Trees

Lesson 10: Iron Chlorosis

Lesson 11: Fertilization & Review

CMG Tree Care Crossword



Across

4. In the fall, use the ____ setting on a mower to break up tree leaves into smaller pieces.
5. During tree establishment, this nutrient can stimulate top growth of the tree, at the expense of root growth.
9. Tree wrap should be put on in late November and removed during this month.
10. When using herbicide near trees, always read the ____ in its entirety.

Down

1. Contrary to popular belief, tree roots tend to be ____ in depth and extend three to five times the width of the canopy.
2. It will take approximately ____ seasons for a three inch caliper tree to become established.
3. Staking straps should be made of this material.
6. A mulch ring will help prevent string ____ and lawn mower damage at the base of the tree.
7. A mulch "____" is a heavy application of mulch piled around the trunk of the tree.
8. It is recommended that you water mature trees outside of the ____.

Class Notes: IPM & Diagnostics

- ☐ Complete online class
- ☐ Review GardenNotes for this class (if desired)
- ☐ Complete homework & worksheet (optional)
- ☐ Attend one weekly live review
- ☐ Complete quiz online in Canvas

----- Notes -----

Lesson 1: Integrated Pest Management

Lesson 2: The Diagnostic Process

Class Notes: IPM & Diagnostics

Lesson 3: Understanding Pesticide Labels



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

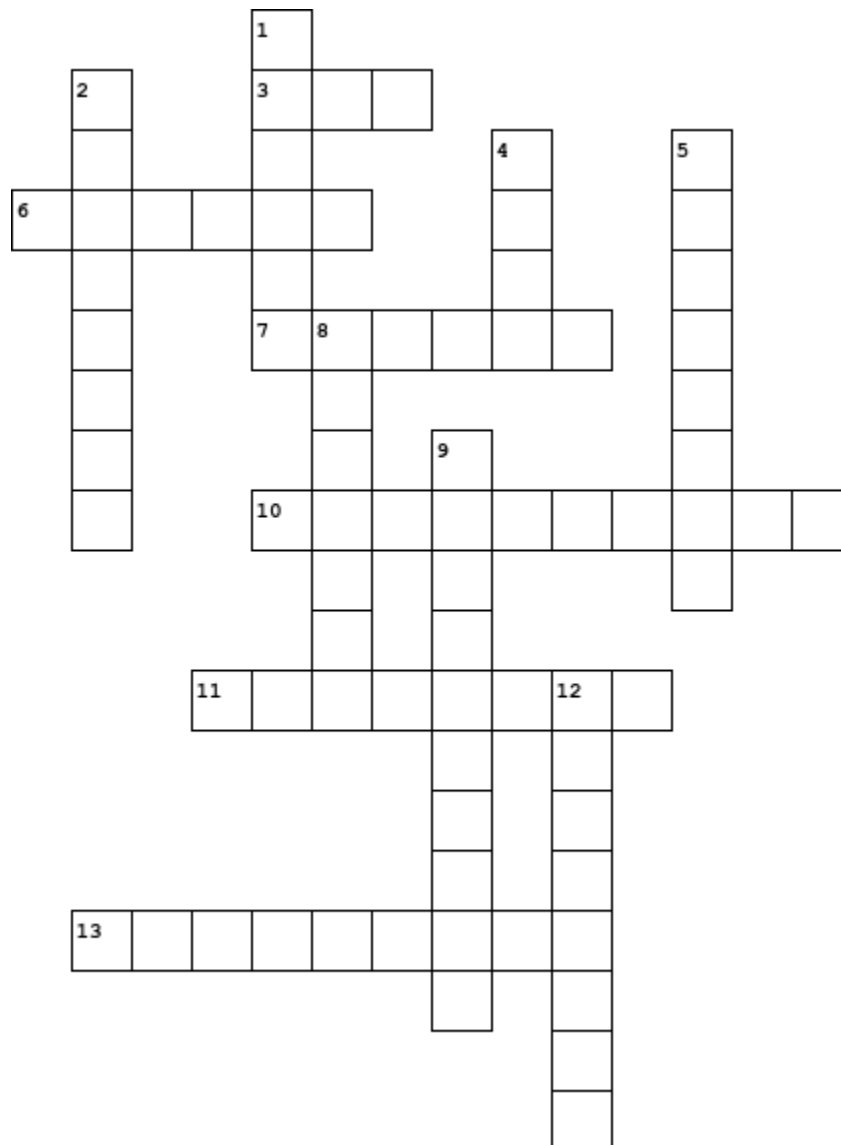
CMG GardenNotes #105

Homework: IPM & Diagnostics

Covers GN# 100, 101, 102, 112, and 113.

1. Why is Integrated Pest Management (IPM) the best approach to managing pest problems?
2. Why is it important to discuss tree care issues as they relate to growth phases?
3. What is the first step in the diagnostic process?
4. Why is it important to know what is "normal" for a given plant?

CMG IPM & Diagnostics Crossword



Across

3. Initials for this multi-pronged approach to managing pests.
6. A natural botanical pesticide derived from these.
7. Sunken, usually discolored area on a plant.
10. Checking plants on a regular basis is called this.
11. Symptom name for dead plant tissue.
13. When pests are no longer affected by a pesticide, they are said to be this.

Down

1. A random pattern of damage usually points to this general category.
2. Right plant, right place is an example of this IMP strategy.
4. What we call slimy droplets.
5. Type of pesticide absorbed and spread throughout the plant.
8. A uniform pattern of damage usually points to this general disease category.
9. Planting small throated flowers to attract beneficial insects is an example of this IPM strategy.
12. The first step in diagnosis is to ____ the plant.



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #103

Worksheet: Reading Pesticide Labels

Find answers to the questions from the labels provided.

1. What are the active ingredients?
2. Can I apply this product to lilacs? The plant has powdery mildew and aphids.
3. I have applied this to my cabbage crop. How long do I have to wait after the application to eat it?
4. What is the mode of action for this product?
5. Will this product harm freshwater clams?
6. What action do I take if I accidentally spill this product on my shirt sleeve?
7. How do I dispose of the empty container?
8. How should I store this product?
9. Can I use this product in my greenhouse where I grow culinary herbs for sale?



NATRIA®

INSECT, DISEASE & MITE CONTROL

READY-TO-USE

*For use on Roses, Flowers, Shrubs,
Houseplants & Vegetables*

Para usaren rosas, flores, arbustos, plantas de hogar y hortalizas

- Kills Fungus, Insects & Mites
- Prevents Leaf Loss Caused
by Black Spot & Rust

KEEP OUT OF REACH OF CHILDREN

CAUTION

See back panel for additional
precautionary statements

Active Ingredients:

Sulfur	0.20%
Pyrethrins	0.01%
Other Ingredients	99.79%
Total	100.00%

NET CONTENTS 24 FL OZ (709ml)

797013496 R.1



**INSECT, DISEASE
& MITE CONTROL**
READY-TO-USE

PRECAUTIONARY STATEMENTS (cont'd)

CAUTION Hazards to Humans and Domestic Animals

- Causes moderate eye irritation. Avoid contact with eyes. Avoid contact with skin or clothing.
- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

FIRST AID +

IF ON SKIN OR CLOTHING

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

IF IN EYES

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. For additional information on this pesticide product, you may call toll free 1-877-229-3763 for emergency medical treatment information.

NOTICE TO BUYER: To the extent consistent with applicable law, seller warrants that this product conforms to the chemical description on this label and is reasonably fit for the purposes stated on this label only when used in accordance with directions under normal use conditions. This warranty does not extend to use of this product contrary to label directions, or under conditions not reasonably foreseeable to seller. To the extent consistent with applicable law, seller makes no other warranties, either expressed or implied.

Money Back Guarantee: If you are not satisfied with this product, we will gladly refund your original purchase price.

EPA Reg. No. 67702-15-72155

EPA Est. No indicated by 3rd and 4th digits of the batch number on this package.

(47)=52251-OR-005 (65)=432-TX-1

(57)=071106-GA-003



Distributed by: Bayer Advanced
A Business Unit of Bayer CropScience LP
P.O. Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, NC 27709

Sold under License of W. Neudorff GmbH KG

Bayer (reg'd), Bayer Cross (reg'd), Bayer Advanced™ and Natria® are trademarks of Bayer.

PRESS TO RESEAL

79713606d 140403AV1



INSECT, DISEASE & MITE CONTROL READY-TO-USE

This product controls a wide range of fungal diseases and pests. For use on roses, flowers, houseplants, ornamental trees and shrubs, fruits, nuts, and vegetables. Contact killer for both insect and mite pests. Convenient and Easy-to-use.

READ THE LABEL FIRST!



Indicaciones
en español
después de las
de inglés

QUICK FACTS

- Controls Insects, Fungal Diseases and Mites Including Spider Mites
- For Use on Plants—Indoors & Outdoors
- Use Up to Day Before Harvest

KILLS

Ants (excluding Fire Ants, Harvester Ants, Pharaoh's Ants and Carpenter Ants), Aphids, Mites, Spider Mites, Leafhoppers, Caterpillars, Rose Slugs, Whitefly, Spittlebugs, Mealybugs, Scale, Thrips, Psyllids, Plant Bugs, Lace Bugs, Fruit Flies, and Earwigs.

FUNGAL DISEASES

Blackspot, powdery mildew, rust, scab, blight, brown rot, and leaf spot.

CONTROLLED

WHERE TO USE

On roses, flowers, listed fruit and nut trees, vegetables, vine plants, ornamentals and lawns.

WHEN TO USE



When insects, insect damage, or fungal disease first appears.

For questions or comments,
call toll-free 1-877-BayerAG (1-877-229-3724)

ACTIVE INGREDIENTS:

Sulfur	0.20%
Pyrethrins	0.01%
OTHER INGREDIENTS	99.79%
TOTAL	100.00%

EPA Reg. No. 67702-15-72155

EPA Est. No indicated by 3rd and 4th digits of the
batch number on this package. (47) = 52251-OR-005
(65) = 432-TX-1 (57) = 071106-GA-003

79713606d 140403AV1

**FOR USE ONLY ON
RESIDENTIAL**

LAWN AND GARDENS



DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

USE PRECAUTIONS

- Some varieties of grapes and cucurbits are sensitive to sulfur and some plant damage may occur.
- Use care or do not spray on sulfur sensitive plants. If not sure, test spray a few leaves 2 days before spraying the entire plant.

USE RESTRICTIONS

- Do not apply to strawberry fruit that will be used for canning.
- Do not wet plants to point of runoff or drip.
- Do not water the treated areas to point of runoff or drip.
- Do not make applications during rain.
- Not for use in outdoor residential misting systems.
- Do not apply more than 10 times per season.
- Do not reapply within 3 days except under extreme pest pressure.
- In case of extreme pest pressure do not reapply within 24 hours.
- Do not apply more than 1 time per day.
- Do not apply more than 18.5 fl. oz. per 100 square feet per application.
- Do not apply if temperatures are expected to be over 90° F.
- Do not apply this product in a way that will contact adults, children or pets, either directly or through drift.
- Remove pets, birds, and cover aquariums before spraying.
- Remove or cover exposed food and drinking water before application. Remove or cover dishes, utensils, food processing equipment, and food preparation surfaces, or wash them before use.
- Do not apply directly to or near water, storm drains, or drainage ditches. Do not apply when windy. To prevent product runoff, do not over water treated area(s) or apply prior to heavy rainfall.
- Do not apply directly into sewers or drains, or to any area like a gutter where drainage to storm sewers, water bodies, or aquatic habitat can occur.
- Do not allow the product to enter any drain during or after application.
- Do not allow adults, children or pets to enter the treated area until sprays have dried.
- Do not spray plants with this product within 21 days of an oil spray.

BEFORE YOU USE

DIRECTIONS FOR USE (cont'd)

FOR CONTROL OF FUNGAL DISEASES

Controls a wide range of fungal diseases including: black spot, powdery mildew, rust, scab, blight, brown rot, and leaf spot. Thoroughly spray all areas of the plant, especially new shoots. For best control apply as a protective spray early in the season before the diseases are noticed. Re-spray every 7 to 10 days or after rain. May be used up to day before harvest.

FOR CONTROL OF INSECTS/MITES

Controls a wide range of pests including: Ants (excluding fire ants, harvester ants, Pharaoh's ants and carpenter ants), Aphids (including Green Peach Aphids), Armyworms, Bagworms, Beet Armyworm, Beetles (including Asparagus Beetle, Bean Beetles, Blister Beetles, Colorado Potato Beetles, 12-spotted Cucumber Beetles, Cucumber Beetles, Darkling Beetles (lesser mealworm), Saw-toothed Grain Beetles, Elm Leaf Beetles, Flea Beetles, Japanese Beetles, Mexican Bean Beetles), Blow Flies, Borers (including European Corn Borer, and Squash Vine Borer), Cabbage Looper, Cabbageworms (including Cross-striped Cabbageworm and Imported Cabbageworm), Cankerworms, Caterpillars (including Eastern Tent Caterpillar, Forest Caterpillar and Tent Caterpillar), Crane Flies, Crickets, Diamondback Moth Larvae, Earwigs, Fireworms, Fungus Gnats, Fruit Flies, Glassy Winged Sharpshooter, Grape Leaf Skeletonizer, Green Fruit Worm, Harlequin Bug, Hornworms including Tomato Hornworm, Karyids, Lace Bugs, Leafhoppers (including Grape Leafhopper, and Potato Leafhoppers), Leafminers, Leafhoppers, Looper, Leafrollers (including Fruit Tree Leafrollers), Lygus, Maggots (including Apple Maggot and Onion Maggot), Mealy Bugs, Millipedes, Mites (including Spider Mites and Clover Mite), Moths (including Artichoke Plume Moth, Codling Moth, Diamondback Moth, European Pine Tip Moth, Gypsy Moth (adults and larvae), Indian Meal Moth and Mediterranean Flour Moth), Mushroom Flies, Navel Orangeworm, Pear Psylla, Plant Bugs, Psyllids, Ross Slugs, Scale, Silverfish, Skippers, Sowbugs, Spittlebugs, Squash Bugs, Stink Bugs, Tarnished Plant Bug, Thrips (including Greenhouse Thrips, Vinegar Flies, Webworms, Weevils (including Boll Weevil, Carrot Weevil, Clover Weevil and Rice Weevil), Whitefly. Thoroughly spray all areas of the plant, especially new shoots and underside of leaves. Pests need to be contacted by the spray to be controlled. For use only on residential lawns and gardens. Not for use on agricultural establishments growing agricultural crops or commodities for resale.

HOW TO USE
Shake well before using.
Do not dilute.

(cont'd)

(cont'd)

DIRECTIONS FOR USE (cont'd)			
USE SITE - INDOOR, OUTDOOR AND GREENHOUSE		PEST	DISEASE
FRUIT AND NUT TREES: Almond, apple, cherry, citrus, filbert, nectarine, peach, pear, plum, prune, walnut		ants (excluding fire ants, harvester ants, Pharaoh's ants and carpenter ants), aphids, apple maggot, beetles, mites, moths, spider mites, leafhoppers, leafrollers, leafminers, caterpillars, whitefly, spittlebugs, mealybugs, scale, thrips, psyllids, plant bugs, fruit flies, earwigs	scab, powdery mildew, rust, blight, brown rot
VEGETABLE AND VINE PLANTS: beans, beets, blackberries, blueberries, broccoli, brussel sprouts, cabbage, carrots, cauliflower, corn, cucurbits, (cucumber, melons, pumpkins and squash), currant, gooseberries, grapes, kale, onions, peas, peppers, potatoes, raspberries, strawberries, tomatoes		ants (excluding fire ants, harvester ants, Pharaoh's ants and carpenter ants), armyworms, beetles, cabbage worms, squash vine borer, armyworms, aphids, mites, spider mites, leafhoppers, leafrollers, leafminers, loopers, onion maggots, caterpillars, whitefly, spittlebugs, mealybugs, scale, thrips, psyllids, plant bugs, fruit fly, earwigs, weevils	powdery mildew, rust, blight, leaf spots
ORNAMENTALS: flowering plants and shrubs, woody ornamentals, roses, trees and houseplants		ants (excluding fire ants, harvester ants, Pharaoh's ants and carpenter ants), aphids, beetles, mites, spider mites, leafhoppers, leafrollers, leafminers, armyworms, loopers, caterpillars, rosehogs, whitefly, spittlebugs, mealybugs, scale, thrips, psyllids, plant bugs, lacebugs, earwigs, weevils	powdery mildew, rust, blight, black spot, leaf spots
LAWNS		aphids, mites, spider mites, leafhoppers, caterpillars, beetles, spittlebugs, thrips, earwigs	rust, leaf spot, blight, powdery mildew

STORAGE AND DISPOSAL	
PESTICIDE STORAGE	Store at room temperature and protect from freezing.
PESTICIDE DISPOSAL AND CONTAINER HANDLING	Nonrefillable. Do not reuse or refill this container. If Empty: • Place in trash or offer for recycling if available. If Partly Filled: • Call your local solid waste agency or call 1-877-229-3724 for disposal instructions. Never place unused product down any indoor or outdoor instructions.
PRECAUTIONARY STATEMENTS	
ENVIRONMENTAL HAZARDS This product irritates. Do not contaminate water when disposing of equipment, washwater, or rinsate. Do not apply directly to or near water. Drift and run-off may be hazardous to fish in water adjacent to treated areas. See Directions for Use for additional precautions and requirements.	
PHYSICAL OR CHEMICAL HAZARDS Combustible. Do not use or store near heat or open flame.	
User Safety Recommendations <ul style="list-style-type: none"> Users should wash hands with plenty of soap and water before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. 	

Class Notes: Lawn Care

- ☐ Complete online class
- ☐ Review GardenNotes for this class (if desired)
- ☐ Complete homework & worksheet (optional)
- ☐ Attend one weekly live review
- ☐ Complete quiz online in Canvas

----- Notes -----

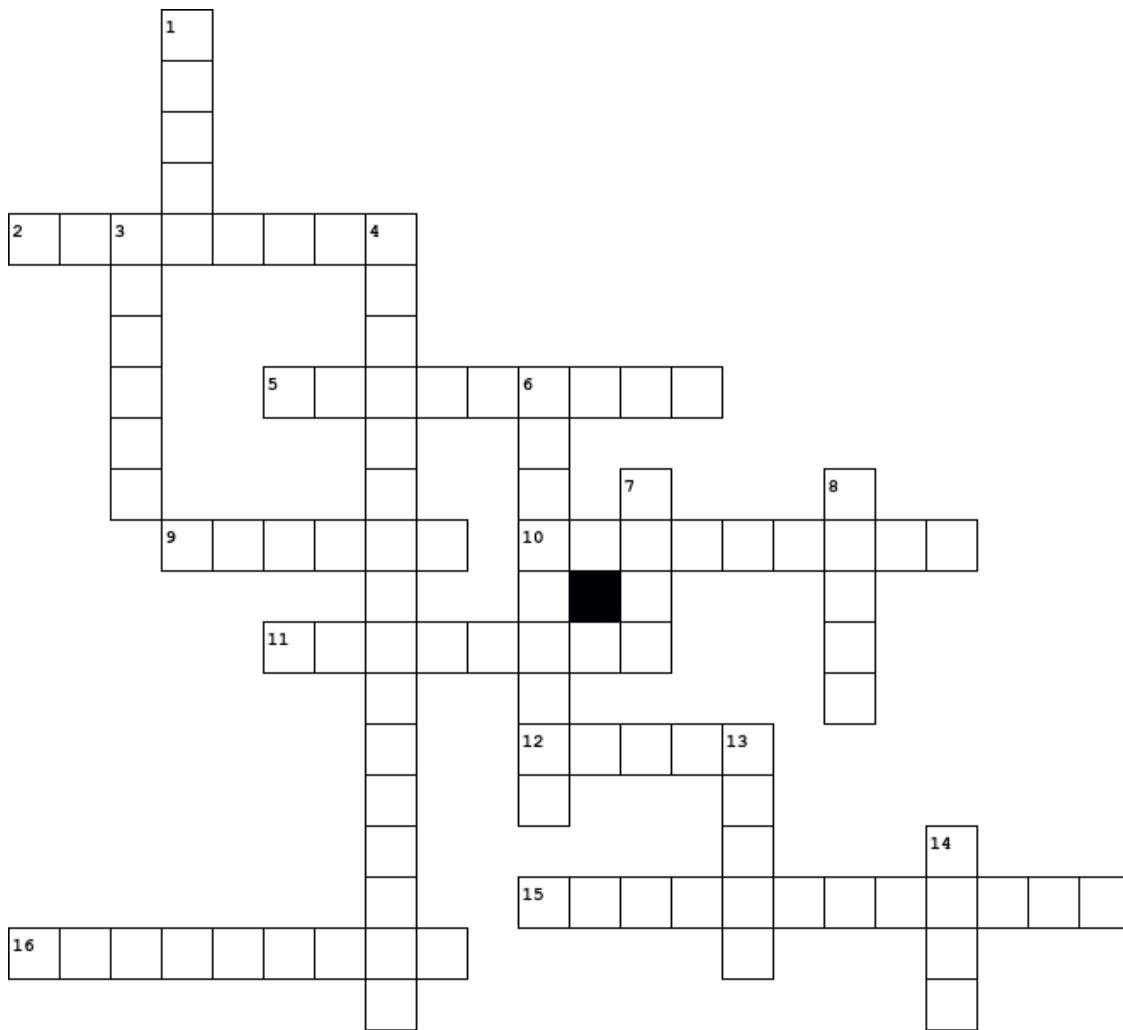
Lesson 1: Turf Introduction

Lesson 2: Turfgrass Management

Class Notes: Lawn Care

Lesson 3: Lawn Afflictions

CMG Turf Management Crossword



Across

2. This fertilizer nutrient makes grass darker green and it grows faster.
5. This is a pesticide used to control WEEDS.
9. This wild animal can cause dead spots in lawns (from constant, close feeding and urine injury).
10. This type of weed can grow back every year WITHOUT producing any seed.
11. A management practice used to relieve soil compaction in lawns.
12. These white larvae of beetles feed on turfgrass roots.
15. This native grass can be planted in Colorado home lawns.
16. Used for grass ID - the arrangement of the youngest leaf in the grass shoot (rolled or folded).

Down

1. There are two types of this lawn care implement: the rotary or the reel-type.
3. This is a layer of organic matter that can form in Kentucky bluegrass lawns.
4. This is a disease of over-watered lawns.
6. You should leave these on your lawn when you mow lawn.
7. When this nutrient is deficient, turf can become chlorotic (yellow).
8. This insect-like pest can kill lawns in late winter/early spring (dry conditions).
13. This type of irrigation head applies a large amount of water over a short time period.
14. You are more likely to "stripe" a lawn using this type of fertilizer spreader.



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #571

Worksheet: Turf Diagnostics

SCENARIO 1: **Brown with Lawn Envy**



My neighbor has the most beautiful lawn. What can I do to make mine look as nice as theirs?

- What questions would you ask this client?
- What resources will you use to research options?
- What recommendations might you provide?

 COLORADO STATE UNIVERSITY
EXTENSION

1. What questions would you ask this client?
2. What resources will you use to research?
3. What recommendations might you provide?

SCENARIO 2: **Cutting it Close**

My lawn got away from me during this last rainy spell. Is it OK to mow it?

- What questions would you ask this client?
- What resources will you use to research options?
- What recommendations might you provide?



1. What questions would you ask this client?
2. What resources will you use to research?
3. What recommendations might you provide?

SCENARIO 3: **Listen to your Lawn**

I just moved to Colorado. Can you tell me how to water my lawn?

- What questions would you ask this client?
- What resources will you use to research options?
- What recommendations might you provide?



1. What questions would you ask this client?
2. What resources will you use to research?
3. What recommendations might you provide?

SCENARIO 4: **The Green & Gold Lawn**

My lawn is looking yellow in spots.
How do I make it green again?

- What questions would you ask this client?
- What resources will you use to research options?
- What recommendations might you provide?



1. What questions would you ask this client?
2. What resources will you use to research?
3. What recommendations might you provide?

SCENARIO 5: **Mower Mystery**



After mowing I noticed mowing tracks of brown grass. Is the grass dead? What's causing this and what can we do to fix and prevent it?

- What questions would you ask this client?
- What resources will you use to research options?
- What recommendations might you provide?

1. What questions would you ask this client?
2. What resources will you use to research?
3. What recommendations might you provide?

SCENARIO 6: **Can you Spot the Problem?**



Ack! What's causing these brown spots in my lawn?

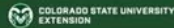
- What questions would you ask this client?
- What resources will you use to research options?
- What recommendations might you provide?

1. What questions would you ask this client?
2. What resources will you use to research?
3. What recommendations might you provide?

SCENARIO 7: **A Hare-y Problem**

My lawn appears to be dying and is almost bald in certain areas. I water regularly but it's not working. What's happening and how can I fix it?

- What questions would you ask this client?
- What resources will you use to research options?
- What recommendations might you provide?



1. What questions would you ask this client?
2. What resources will you use to research?
3. What recommendations might you provide?

Class Notes: Weed Management

- ☐ Complete online class
- ☐ Review GardenNotes for this class (if desired)
- ☐ Complete worksheet (optional)
- ☐ Attend one weekly live review
- ☐ Complete online in Canvas

----- Notes -----

Lesson 1: Introduction

Class Notes: Weed Management

Lesson 2: Weed Management



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #356

Worksheet: Weed Management

SCENARIO 1: Ready to Clean Up & Grow

I just moved to Colorado and into a house where the raised vegetable beds and pathways are full of weeds. How should I clean this up so I can start planting this year – or to get ready for next year?

- What questions might you ask?
- What resources could you use as a CMG?
- What science-based recommendations could you give?

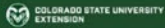


1. What questions would you ask this client?
2. What resources will you use to research?
3. What recommendations might you provide?

SCENARIO 1: Ready to Clean Up & Grow Part 2

I just moved to Colorado and into a house where the raised vegetable beds are full of weeds. How should I clean this up so I can start planting **WITHOUT USING HERBICIDES**?

- What questions might you ask?
- What resources could you use as a CMG?
- What science-based recommendations could you give?



Listen to Tony Koski's personal story about this property.

Same property, four and a half months later:





SCENARIO 2: Lawn Weeds Run Amok

This weed is taking over my lawn! Why do I have it? Why does it keep coming back when I pull it? How do I get rid of it? Can I spray something to make it go away?

- What questions might you ask?
- What resources could you use as a CMG?
- What science-based recommendations could you give?

 COLORADO STATE UNIVERSITY
EXTENSION

1. What questions would you ask this client?
2. What resources will you use to research?
3. What recommendations might you provide?

SCENARIO 3: Concerned Citizen or Nosey Neighbor?

My neighbor has tall, noxious weeds going to seed. What can CSUE do about this problem? What can I do?

- What questions might you ask?
- What resources could you use as a CMG?
- What science-based recommendations could you give?



COLORADO STATE UNIVERSITY
EXTENSION



1. What questions would you ask this client?
2. What resources will you use to research?
3. What recommendations might you provide?

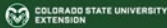


**SCENARIO 4:
Suckers, Saplings, &
Seedlings... Oh My!**



I've got little trees popping up all over my landscape. Where are they coming from, and what can I do to get rid of them? Is there something I can spray to control them?

- What questions would you ask this client?
- What resources will you use to research options?
- What recommendations might you provide?



1. What questions would you ask this client?
2. What resources will you use to research?
3. What recommendations might you provide?

Class Notes: Entomology

- ☐ Complete online class
- ☐ Review GardenNotes for this class (if desired)
- ☐ Complete homework (optional)
- ☐ Attend one weekly live review
- ☐ Complete quiz online in Canvas

----- Notes -----

Lesson 1 Introduction

Lesson 2: Identifying Insects

Class Notes: Entomology

Lesson 3: Insects in the Garden



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #318

Homework: Entomology

Answer the following questions.

1. How do you know if a creature in your garden is an insect?
2. What makes an insect "beneficial"?
3. Why can aphid populations increase so rapidly?
4. It is July. You have correctly diagnosed a large spider mite infestation on a customer's raspberry plants. What is the most important management strategy you can recommend to the customer?
5. Why do gardeners often report that ladybugs "disappear" shortly after releasing them in the garden?
6. List three gardening practices that can improve habitat for native pollinators in personal gardens.
7. Why is fall garden cleanup valuable to insect pest management? How would you advise a customer who would like to leave the leaves to protect overwintering insects/pollinators?"
8. While volunteering as a Master Gardener, someone asks you about their two-year old crabapple tree. There are "a lot" of holes in the leaves and they want to know what could be chewing on them. The client cannot find any insects. How will you answer this question?

Class Notes: Plant Pathology

- ☐ Watch recordings
- ☐ Review GardenNotes for this class (if desired)
- ☐ Complete homework (optional)
- ☐ Attend one weekly live review
- ☐ Complete quiz online in Canvas

----- Notes -----

Lesson 1: Plant Pathology Overview

Lesson 2: Biotic Issues – Part I

Class Notes: Plant Pathology

Lesson 3: Biotic Issues – Part II

Lesson 4: Abiotic Issues

Lesson 5: Completion of the Plant Diagnostic Process



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #332

Homework: Plant Pathology

Answer the following questions.

1. What four components must be present for biotic disease to develop?
2. Another name for a living cause of disease is:
3. Another name for a non-living cause of disease is:
4. List three ways to manage powdery mildew on a shrub.
5. A client brings you a foot-long branch of an aspen tree. The leaves on the branch tips are dark brown and wilted; the branch tip is bent over. Could this be fire blight? Why or why not?
6. List two general management strategies for *Cytospora* canker disease on an aspen.
7. How are leaf scorch and winter desiccation similar in terms of how they develop? In symptom expression?
8. A ten-foot row of low-growing junipers is planted between the west facing side of an apartment building and a sidewalk. By mid-winter, the sidewalk side of the junipers begins to turn completely brown. What symptom supports an abiotic diagnosis? State a possible cause of the juniper symptoms.

Class Notes: Colorado Gardening Challenges

- ☐ Download handouts located in Canvas
- ☐ Watch recordings
- ☐ Attend one weekly live review
- ☐ Complete quiz online in Canvas

----- Notes -----

Lesson 1: Introduction to Colorado Gardening Challenges

Lesson 2: Ignition Resistant Landscaping

Class Notes: Colorado Gardening Challenges

Lesson 3: Gardening with Wildlife

Lesson 4: Benefits of Using Native Plants

Lesson 5: Native Plants for Every Situation

Class Notes: Vegetables

- ☐ Complete online class
- ☐ Review GardenNotes for this class (if desired)
- ☐ Attend one weekly live review
- ☐ Complete quiz online in Canvas

----- Notes -----

Lesson 1: Vegetable Garden Planning & Layout

Lesson 2: Soil Management in the Vegetable Garden

Class Notes: Vegetables

Lesson 3: Growing Vegetables

Lesson 4: Other Topics: Mountain Gardening & Herb Gardening

Class Notes: Pruning

- ☐ Complete online class
- ☐ Review GardenNotes for this class (if desired)
- ☐ Complete homework (optional)
- ☐ Attend live review
- ☐ Complete quiz online in Canvas

----- Notes -----

Lesson 1: Tree Growth and Decay

Lesson 2: Structural Pruning of Young Trees

Lesson 3: Pruning Flowering Shrubs and Evergreens



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #618

Homework: Pruning

1. Describe the following terms:
 - a) Branch bark ridge.
 - b) Branch collar.
 - c) Reaction zone.
 - d) Branch defense zone.
2. Define and draw the following pruning methods:
 - a) Structural/subordinate pruning.
 - b) Heading.
 - c) Thinning.
 - d) Raising or "Limbing Up".
 - e) Reduction.

3. Describe in your own words, the three-cut pruning technique. Why is this method important to follow exactly?
4. Evaluate the tree below and draw where you would make your pruning cuts:



Class Notes: Tree Fruits

- ☐ Complete online class
- ☐ Review GardenNotes for this class (if desired)
- ☐ Attend live review
- ☐ Complete quiz online in Canvas

----- Notes -----

Lesson 1: Fruit Tree Basics

Lesson 2: Structure and Pruning Fruit Trees

Lesson 3: Fruit Tree Issues

Class Notes: Small Fruits

- ☐ Complete online class
- ☐ Review GardenNotes for this class (if desired)
- ☐ Attend live review
- ☐ Complete quiz online in Canvas

----- Notes -----

Lesson 1: Introduction

Lesson 2: Growing Raspberries

Lesson 3: Growing Blackberries

Lesson 4: Growing Strawberries

Lesson 5: Growing Grapes

Lesson 6: Growing Currants & Gooseberries

Class Notes: Irrigation

- ☐ Complete online class
- ☐ Review GardenNotes for this class (if desired)
- ☐ Attend live review
- ☐ Complete quiz online in Canvas

----- Notes -----