

NURSERY/LANDSCAPE

Purpose

The purpose of the Nursery/Landscape Contest is to encourage students to gain knowledge of the production, marketing, utilization, and culture of landscape plants.

Objectives

In preparing for the contest, the student should develop the following skills:

- I. Identification of woody ornamental and turf plants commonly used in Missouri landscapes.
- II. Understanding of the basic principles involved in correct use of plants in the landscape.
- III. Ability to diagnose common problems encountered in the culture of landscape plants and to prescribe methods for preventing or correcting these problems.

Crosswalk with Show Me Standards

Objectives – Students participating in the Career Development Event should be able to:		Show-Me Standards	
		Knowledge Standards (Content Areas)	Performance Standards (Goals)
1.	Identification of woody ornamental and turf plants commonly used in Missouri landscapes.	CA.5	1.4, 1.5, 1.10
2.	Ability to recognize the characteristics of a given plant which adds to or detracts from its quality or usefulness.	MA.1, MA.2, MA.5 SC.3, SC.4, SC.8	3.1, 3.2, 3.3, 3.5, 3.6, 3.8
3.	Understanding of the basic principles involved in correct use of plants in the landscape.		4.4, 4.8
4.	Ability to diagnose common problems encountered in the culture of landscape plants and to prescribe methods for preventing or correcting these problems.		

Corresponding Secondary Agriculture Curriculum			
Course and/or Curriculum:	Landscape/Turfgrass Management	Unit(s):	Unit III – Identification Unit IX – Site Analysis and Evaluation Unit X – Selecting and Using Plants in the Landscape Unit XI – Landscape Designing Unit XII – Developing Cost Estimates
	Greenhouse Operation and Management		Unit VI – Plant Health Unit VII – Greenhouse Business Management
	Plant Science		Unit IV – Weeds, Diseases and Insects

Event Format

The Nursery/Landscape CDE shall consist of the following four (4) components:

1. General Knowledge Examination

This portion of the contest will test the contestant's knowledge and understanding of the production, marketing, utilization, and culture of landscape plants. It will consist of 50 multiple choice questions selected from the following:

- (1) Turf Grasses
- (2) Shrubs
- (3) Trees
- (4) Pests and Pesticides
- (5) Soils
- (6) Planting
- (7) Fertilizers
- (8) Pruning
- (9) Landscaping.

2. Practicum - Plant Disorder Diagnosis

This portion of the contest will test the ability of the contestants to identify diseases, insects, weeds, and physiological disorders based on plant systems or on the pests themselves. Contestants will be required to make diagnoses on 20 specimens drawn from the Plant Disorder Diagnosis Scorecard (Form 67). Specimens may be live, preserved, photographs, or symptoms associated with disorders.

3. Landscape Design Problem

This practicum is designed to evaluate participants' knowledge of and ability in:

- (1) Evaluating a landscape design
- (2) Reading a landscape drawing
- (3) Measuring and calculating materials needed to execute a landscape plan
- (4) Evaluating factors that affect profitability of a landscape business

A landscape drawing and scratch paper will be provided to the participants. There will be 20 objective questions about the landscape plan, and each correct answer has a value of 5 points. The questions may include such areas as determining how accent was provided in the public area, the form and size specified for a certain plant, the cost of fencing, the number of patio pavers required, the area of sod to be installed, the volume of mulch required and the labor cost to install a ground-cover bed. One hour will be the maximum time allowed for this component.

4. Identification

Each contestant will be required to identify 50 specimens from the Nursery/Landscaping Supplemental Information List (LIST 66). A specimen may be twigs, foliage, flower, fruit, or an entire plant. Specimens will be identified by number. The contestant will need to match the specimen with the correct name on the answer sheet and write the number of the specimen in the blank next to the name. A plant may be represented by more than one specimen. A minimum of 30 seconds per identification sample will be allowed and a 10-minute review period will be allowed at the end.

Event Scoring

Event	Points
General Knowledge Exam - 50 questions @ 4 points each	200 points
Plant Disorder Practicum - 20 specimens @ 5 points each	100 points
Landscape Design Problem - 20 questions @ 5 points each	100 points
Identification - 50 specimens @ 4 points each	200 points
Total	600 points

1. Tie scores among teams in all events should be broken using the high individual team member's score. In case the scores are tied, the scores of the second high individual on each team should be used.

Event Rules and Regulations

1. A team will consist of three or four members.
2. The team score will be the total of the 3 highest individual scores for the respective team.
3. Students are allowed to bring their own **engineer's scale** for use in the CDE.
4. Calculators may be used. In all events, only six-function, (nonprogrammable and non-graphing) models may be used. Therefore, the calculators are limited to the following keys: Plus (+); Minus (-); Multiplication (x); Division (/); Equals (=); Memory Clear/Recall (MRC); Memory Minus (M-); Memory Plus (M+); Plus / Minus (+/-); Percentage (%); Square Root ($\sqrt{\quad}$). See page 3, rule #8 of the General CDE Guidelines for an example.

References

Identification

Catalogs from mail order seed and nursery companies are an excellent source of information. They can be obtained free of charge from most companies. Farm and garden magazines are full of addresses for these companies in the spring of the year.

Trees of Missouri Field Guide, available from MDC for \$7.50

<http://www.mdcnatureshop.com/mdc.cgi/scan/st=db/co=yes/sf=category/se=Plants/op=eq.html?id=W3s5EDC8>

A Guide to Field Identification--Trees of North America, C. Frank Brockman, Golden Press, New York, 1968.

American Standards for Nursery Stock, American Association of Nurserymen, 230 Southern Building, Washington, DC 20005.

General

Landscaping and Turf Management (Instructor and Student Reference) (1990). Instructional Materials Laboratory, 1400 Rock Quarry Rd. Q156, UMC, Columbia, MO 65202 <http://iml-ag.missouri.edu>

Pesticide Applicators Training Manual, (request MP731), Extension Publications, 2800 Maguire Blvd., University of Missouri, Columbia, MO 65211. Phone: 800-292-0969.

Landscape Design, A Practical Approach 4th Edition (1988). Leroy G. Hannebaum. Prentice-Hall, Inc., Englewood Cliffs, NJ.

Ornamental and Turf Pest Control, Missouri Manual 89, Published by MU Extension – Extension Publications, 2800 Maguire Blvd., UMC, Columbia, MO 65211. Phone: 800-292-0969.

University of Missouri Horticulture website: <http://horticulture.missouri.edu/starbuck/frame.htm>

Reiley & Shry (1988). Introductory Horticulture, Albany, New York: Delmar Publishers, Inc.

Horticultural Guide Sheets: 6601, 6700, 6708, 6720, 6750, 6770, 6800, 6805, 6810, 6815, 6820, 6825, 6830, 6835, 6840, 6865, 6870, 6880, 6881, 6900, 6901, 6905, and 6910. They may be obtained from your local extension center or by writing:

Extension Publications
222 South Fifth Street
University of Missouri
Columbia, MO 65211

Forms

See the following: LIST 66, FORM 66, FORM 67.

Supplemental Information: Identification List

SHADE TREES

- 001. Bald Cypress / *Taxodium distichum*
- 002. Ginkgo / *Ginkgo biloba*
- 003. Honey Locust / *Gleditsia triacanthos*
- 004. Japanese Maple / *Acer palmatum*
- 005. Little Leaf Linden / *Tilia cordata*
- 006. Northern Red Oak / *Quercus rubra*
- 007. Norway Maple / *Acer platanoides*
- 008. Pin Oak / *Quercus palustris*
- 009. Red Maple / *Acer rubrum*
- 010. River Birch / *Betula nigra*
- 011. Sugar Maple / *Acer saccharum*
- 012. Sweet Gum / *Liquidambar styraciflua*
- 013. Tulip Tree / *Liriodendron tulipifera*
- 014. White Ash / *Fraxinus americana*

FLOWERING TREES

- 015. Bradford Pear / *Pyrus calleryana* 'Bradford'
- 016. Eastern Redbud / *Cercis canadensis*
- 017. Flowering Crabapple / *Malus* spp.
- 018. Flowering Dogwood / *Cornus florida*
- 019. Golden Rain Tree / *Koelreuteria paniculata*
- 020. Kwanzan Japanese Flowering Cherry / *Prunus serrulata* 'Kwanzan'
- 021. Saucer Magnolia / *Magnolia soulangeana*
- 022. Washington Hawthorn / *Crataegus phaenopyrum*

EVERGREEN TREES

- 023. American Holly / *Ilex opaca*
- 024. Austrian Pine / *Pinus nigra*
- 025. Blue Spruce / *Picea pungens*
- 026. Hemlock / *Tsuga canadensis*
- 027. Norway Spruce / *Picea abies*
- 028. Scotch Pine / *Pinus sylvestris*
- 029. Southern Magnolia / *Magnolia grandiflora*
- 030. White Pine / *Pinus strobus*

PERENNIALS

LIST 66

- 031. Astilbe / Astilbe hybrid
- 032. Black Eyed Susan / Rudbeckia fulgida
- 033. Columbine / Aquilegia x hybrida
- 034. Day Lily / Hemerocallis spp.
- 035. Gaillardia / Gaillardia x grandiflora
- 036. Hosta Lily / Hosta sp.
- 037. Hybrid Tea Rose / Rosa hybrid, class hybrid tea
- 038. Jonquil / Narcissus spp.
- 039. Mums / Dendranthema x morifolium
- 040. Peony / Paeonia hybrid
- 041. Purple Cone Flower / Echinacea purpurea
- 042. Shasta Daisy / Chrysanthemum x superbum
- 043. Tulip / Tulipa spp.

EVERGREEN SHRUBS

- 044. Arbor Vitae / Thuja orientalis
- 045. Blue Holly / Ilex meserveae
- 046. Chinese Juniper / Juniperus chinensis
- 047. Common Boxwood / Buxus sempervirens
- 048. Inkberry / Ilex glabra
- 049. Leatherleaf Viburnum / Viburnum rhytidophyllum
- 050. Mugo Pine / Pinus mugo
- 051. Oregon Holly-grape / Mahonia aquifolium
- 052. Rhododendron / Rhododendron spp.
- 053. Spreading Euonymus / Euonymus kiautschovicus
- 054. Yew / Taxus spp.

VINES AND GROUND COVERS

- 055. Ajuga / Ajuga reptans
- 056. Bigleaf Wintercreeper / Euonymus fortunei 'Vegetus'
- 057. Creeping Juniper / Juniperus horizontalis
- 058. Crown Vetch / Coronilla varia
- 059. English Ivy / Hedera helix
- 060. Honeysuckle / Lonicera spp.
- 061. Periwinkle / Vinca minor

TURF

- 062. Bermuda Grass / *Cynodon dactylon*
- 063. Bluegrass / *Poa pratensis*
- 064. Red Fescue / *Festuca rubra*
- 065. Rye Grass / *Lolium perenne*
- 066. Tall Fescue / *Festuca elatior*
- 067. Zoysia Grass / *Zoysia japonica*

LIST 66

FLOWERING SHRUBS

- 068. Bearberry Cotoneaster / *Cotoneaster dammeri*
- 069. Common Lilac / *Syringa vulgaris*
- 070. Flowering Quince / *Chanomeles speciosa*
- 071. Forsythia / *Forsythia intermedia*
- 072. Goldflame Spiraea / *Spiraea bumalda*
- 073. Japanese Barberry / *Berberis thunbergii*
- 074. Little Princes Spiraea / *Spiraea japonica*
- 075. Oakleaf Hydrangea / *Hydrangea quercifolia*
- 076. Privet / *Ligustrum spp.*
- 077. Pyracantha / *Pyracantha coccinea*
- 078. Redoiser Dogwood / *Cornus sericea*
- 079. Rose of Sharon / *Hibiscus syriacus*
- 080. Shrubby Cinquefoil / *Potentilla fruticosa*
- 081. Vanhoutte Spiraea / *Spirea vanhouttei*
- 082. Winged Euonymus / *Euonymus alatus*

**PLANT IDENTIFICATION
Nursery/Landscape**

FORM 66

Name: _____ Contestant Number: _____

School: _____ School Number: _____

(Place number of correct specimen in blank.)

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PLANT DISORDER DIAGNOSIS SCORECARD
Nursery/Landscape

Name _____ Contestant Number: _____

School: _____ School Number: _____

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Insects

- 01. Aphid
- 02. Bagworm
- 03. Borer
- 04. Leafhopper
- 05. Leaf Miner
- 06. Scale
- 07. Spider Mite
- 08. Snail/Slug
- 09. Tent Caterpillar
- 10. Whitefly
- 11. White Grub

Diseases

- 12. Anthracnose
- 13. Apple Scab
- 14. Black Spot
- 15. Botrytis
- 16. Cedar-Apple Rust
- 17. Crown Gall
- 18. Fireblight
- 19. Powdery Mildew

Weeds

- 20. Annual Bluegrass
- 21. Broadleaf Plantain
- 22. Buckhorn Plantain
- 23. Bull Thistle
- 24. Chickweed
- 25. Crabgrass
- 26. Dandelion
- 27. Field Bindweed
- 28. Henbit
- 29. Knotweed
- 30. Nimblewill
- 31. Nutsedge
- 32. Oxalis
- 33. Prickly Lettuce
- 34. Purslane
- 35. White Clover

Physiological Problems

- 36. Iron Deficiency
- 37. Leaf Scorch
(drought/winter burn)
- 38. Nitrogen Deficiency
- 39. 2,4-D Injury

