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 MA.1, MA.2, MA.5 SC.3, SC.4, SC.8	1.4, 1.5, 1.10 3.1, 3.2, 3.3, 3.5, 3.6, 3.8 4.4, 4.8
2.	Ability to recognize the characteristics of a given plant which adds to or detracts from its quality or usefulness.		
3.	Understanding of the basic principles involved in correct use of plants in the landscape.		
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
	Plant Science Curriculum		Basic Plant Science Basic Soil Science Landscape Management Turfgrass Management

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. One (1) hour will be the maximum time allotted for the exam. 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. One (1) minute per sample will be allowed and a 10 minute review period will be allowed at the end. All students will turn in all handouts at the end of each component such as the "Plant Disorder Diagnosis" handout (Form 6).

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. Students will not be allowed to bring their own scratch paper – only allowed to used paper provided. 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. All handout materials must be turned in at the end of each component – landscape drawing and all scratch paper must be turned in. Maximum of one (1) hour to complete this component. *The design plan scale should be a scale shown on a standard engineer scale.

4. Identification

Each contestant will be required to identify 50 specimens from the Nursery/Landscaping Supplemental Information List. This handout must be turned in at the completion of this component. 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 maximum of 50 seconds per identification sample will be allowed and a 10-minute review period will be allowed at the end. **Duplicate samples may not be used in any identification portion of the event.**

Event Scoring

Event	Points	Suggested Time
General Knowledge Exam - 50 questions @ 4 points each	200 points	1 hour
Plant Disorder Practicum - 20 specimens @ 5 points each	100 points	30 minutes
Landscape Design Problem - 20 questions @ 5points each	100 points	1 hour
Identification - 50 specimens @ 4 points each	200 points	1 hour
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.

Testing References

Landscaping Principles and Practices – 7th Edition. By Jack E. Ingels.
http://www.delmarlearning.com/browse_product_detail.aspx?catid=32398&isbn=1428376410

Plant Science Curriculum – Basic Plant Science, Basic Soil Science, Landscape Management, Turfgrass Management Units

Training 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). IML available via DESE website: https://dese.mo.gov/college-career-readiness/career-education/agricultural-education/agricultural-education

National Pesticide Applicator Certification Core Manual (MX328), ***Appendix C – Conversions & Calculations AND pages 169-171 – Calculating Areas & Calculating Application Rates.***

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.

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

Forms

See the following: Training Identification List Student Reference, Plant Identification Contestant Reference 1, Plant Disorder Contestant Reference 2

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. London Planetree / Platanus x acerfolia
007. Northern Red Oak / Quercus rubra
008. Norway Maple / Acer platanoides
009. Pin Oak / Quercus palustris
010. Red Maple / Acer rubrum
011. River Birch / Betula nigra
012. Sugar Maple / Acer saccharum
013. Sweet Gum / Liquidambar styraciflua
014. Tulip Tree / Liriodendron tulipifera
015. White Oak / Quercus alba

FLOWERING TREES

016. Downy Serviceberry / Amelanchier arborea
017. Eastern Redbud / Cercis canadensis
018. Flowering Crabapple / Malus spp.
019. Flowering Dogwood / Cornus florida
020. Golden Rain Tree / Koelreuteria paniculata
021. Saucer Magnolia / Magnolia soulangeana
022. Sweet magnolia / Magnolia virginiana
023. Washington Hawthorn / Crataegus phaenopyrum
024. White Fringe tree / Chionanthus virginicus

EVERGREEN TREES

025. American Holly / Ilex opaca
026. Austrian Pine / Pinus nigra
027. Blue Spruce / Picea pungens
028. Green Giant Arborvitae / Thuja x 'Green Giant'
029. Hemlock / Tsuga canadensis
030. Norway Spruce / Picea abies
031. Southern Magnolia / Magnolia grandiflora
032. White Pine / Pinus strobus

PERENNIALS

033. Astilbe / Astilbe hybrid
034. Black Eyed Susan / Rudbeckia fulgida
035. Columbine / Aquilegia x hybrida
036. Coral Bells/Heuchera
037. Day Lily / Hemerocallis spp.
038. Fountain Grass / Pennisetum alopecuroides
039. Gaillardia /Blanketflower/ Gaillardia x grandiflora
040. Hosta Lily / Hosta spp.
041. Iris/ Iris spp.
042. Jonquil / Daffodil /Narcissus spp.
043. Maiden Grass/Miscanthus spp.
044. Mums /Chrysanthemum/ Dendranthema x morifolium
045. Peony / Paeonia hybrid
046. Purple Cone Flower / Echinacea purpurea
047. Shasta Daisy / Chrysanthemum x superbum
048. Tulip / Tulipa spp.

EVERGREEN SHRUBS

049. Arbor Vitae / Thuja orientalis
050. Blue Holly / Ilex meserveae
051. Chinese Juniper / Juniperus chinensis
052. Common Boxwood / Buxus sempervirens
053. Grey Owl Juniper / Juniperus virginiana 'Grey Owl'
054. Inkberry / Ilex glabra
055. Leatherleaf Viburnum / Viburnum rhytidophyllum
056. Mugo Pine / Pinus mugo
057. Oregon Holly-grape / Mahonia aquifolium
058. Rhododendron / Rhododendron spp.
059. Yew / Taxus spp.

VINES AND GROUND COVERS

060. Ajuga / Ajuga reptans
061. Bigleaf Wintercreeper / Euonymus fortunei `Vegetus'
062. Creeping Juniper / Juniperus horizontalis
063. Creeping Lily Turf / Liriope spicata
064. English Ivy / Hedera helix
065. Honeysuckle / Lonicera spp.
066. Periwinkle /Perennial Vinca/ Vinca minor

TURF

067. Bermuda Grass / Cynodon dactylon

068. Bluegrass / Poa pratensis
069. Red Fescue / Festuca rubra
070. Rye Grass / Lolium perenne
071. Tall Fescue / Festuca elatior
072. Zoysia Grass / Zoysia japonica

FLOWERING SHRUBS

073. Bearberry Cotoneaster / Contoneaster dammeri
074. Common Lilac / Syringa vulgaria
075. Doublefile Viburnum / plicatum f. tomentosum
076. Dwarf Korean Lilac / Syringa meyeri
077. Flowering Quince / Chanomeles speciosa
078. Forsythia / Forsythia intermedia
079. Japanese Barberry / Berberis thunbergii
080. Nine Bark/ Physocarpus opulifolius
081. Oakleaf Hydrangea / Hydrangea quercifolia
082. Privet / Ligustrum spp.
083. Pyracantha / Pyrancantha coccinea
084. Redoiser Dogwood / Cornus sericea
085. Rose of Sharon / Hibiscus syriacus
086. Spirea/ Spirea spp.
087. Viginia Sweetspire / Itea virginica
088. Winged Euonymus/Burning Bush / Euonymus alatus

PLANT IDENTIFICATION LIST **Contestant Reference 1**

SHADE TREES

001. Bald Cypress
002. Ginkgo
003. Honey Locust
004. Japanese Maple
005. Little Leaf Linden
006. London Planetree
007. Northern Red Oak
008. Norway Maple
009. Pin Oak
010. Red Maple
011. River Birch
012. Sugar Maple
013. Sweet Gum
014. Tulip Tree
015. White Oak

FLOWERING TREES

016. Downy Serviceberry
017. Eastern Redbud
018. Flowering Crabapple
019. Flowering Dogwood
020. Golden Rain Tree
021. Saucer Magnolia
022. Sweet magnolia
023. Washington Hawthorn
024. White Fringe tree

EVERGREEN TREES

025. American Holly
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076. Dwarf Korean Lilac
077. Flowering Quince
078. Forsythia
079. Japanese Barberry
080. Nine Bark
081. Oakleaf Hydrangea
082. Privet
083. Pyracantha
084. Redoiser Dogwood
085. Rose of Sharon
086. Spirea
087. Viginia Sweetspire
088. Winged Euonymus

Contestant Reference 2

PLANT DISORDER DIAGNOSIS Reference Sheet
Nursery/Landscape

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
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11. _____
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19. _____
20. _____

Insects

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

Diseases

14. Anthracnose
15. Apple Scab
16. Black Spot
17. Botrytis
18. Cedar-Apple Rust
19. Crown Gall
20. Fireblight
21. Pine Wilt
22. Powdery Mildew
23. Rose Rosette Virus

Weeds

24. Annual Bluegrass
25. Broadleaf Plantain
26. Buckhorn Plantain
27. Bull Thistle
28. Chickweed
29. Crabgrass
30. Dandelion
31. Field Bindweed
32. Henbit
33. Knotweed
34. Nimblewill
35. Nutsedge
36. Oxalis
37. Prickly Lettuce
38. Purslane
39. White Clover

Physiological Problems

40. Iron Deficiency
41. Leaf Scorch (drought/winter burn)
42. Nitrogen Deficiency
43. 2,4-D Injury