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

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

### Corresponding Secondary Agriculture Curriculum

<table>
<thead>
<tr>
<th>Course and/or Curriculum:</th>
<th>Unit(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape/Turfgrass Management</td>
<td>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</td>
</tr>
<tr>
<td>Greenhouse Operation and Management</td>
<td>Unit VI – Plant Health Unit VII – Greenhouse Business Management</td>
</tr>
<tr>
<td>Plant Science</td>
<td>Unit IV – Weeds, Diseases and Insects</td>
</tr>
</tbody>
</table>
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. One hour will be the maximum time allowed for this component. 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.

4. **Identification**
   Each contestant will be required to identify 50 specimens from the Nursery/Landscaping Supplemental Information List (LIST 66). 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.
Event Scoring

<table>
<thead>
<tr>
<th>Event</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Knowledge Exam - 50 questions @ 4 points each</td>
<td>200 points</td>
</tr>
<tr>
<td>Plant Disorder Practicum - 20 specimens @ 5 points each</td>
<td>100 points</td>
</tr>
<tr>
<td>Landscape Design Problem - 20 questions @ 5 points each</td>
<td>100 points</td>
</tr>
<tr>
<td>Identification - 50 specimens @ 4 points each</td>
<td>200 points</td>
</tr>
<tr>
<td>Total</td>
<td>600 points</td>
</tr>
</tbody>
</table>

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 (√). 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


General


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

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

FLOWERING SHRUBS

068. Bearberry Cotoneaster / Contoneaster dammeri
069. Common Lilac / Syringa vulgaris
070. Flowering Quince / Chaenomeles 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 vanhouttel
082. Winged Euonymus / Euonymus alatus
**PLANT IDENTIFICATION**  
**Nursery/Landscape**  

**FORM 66**

<table>
<thead>
<tr>
<th>Shade Trees</th>
<th>Flowering Trees</th>
<th>Evergreen Trees</th>
<th>Perennials</th>
<th>Vines &amp; Ground Covers</th>
</tr>
</thead>
<tbody>
<tr>
<td>020. Kwanzan Japanese Maple / Prunus serrulata 'Kwanzan'</td>
<td>034. Day Lily / Hemerocallis spp.</td>
<td>066. Tall Fescue / Festuca elatior</td>
<td>066. Tall Fescue / Festuca elatior</td>
<td>076. Oakleaf Hydrangea / Hydrangea quercifolia</td>
</tr>
<tr>
<td>024. Austrian Pine / Pinus nigra</td>
<td>038. Jonquil / Narcissus sp.</td>
<td>070. Flowering Quince / Chamaemelum sp.</td>
<td>070. Flowering Quince / Chamaemelum sp.</td>
<td>080. Shrubby Cinquefoil / Potentilla fruticosa</td>
</tr>
</tbody>
</table>
FORM 67

PLANT DISORDER DIAGNOSIS SCORECARD
Nursery/Landscape

Name __________________________________ Contestant Number: __________
School: __________________________________ School Number: __________

1. _______
2. _______
3. _______
4. _______
5. _______
6. _______
7. _______
8. _______
9. _______
10. _______
11. _______
12. _______
13. _______
14. _______
15. _______
16. _______
17. _______
18. _______
19. _______
20. _______

**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

**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

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

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