



Middle Tennessee Nursery/Landscape

Purpose

The purpose of the Middle Tennessee FFA Nursery/Landscape Career Development Event is to promote career interest, encourage proficiency development and recognize excellence in participants of the event which includes all aspects of the industry to produce, market, utilize and maintain landscape plants (woody and herbaceous plants and turf grasses), as well as related production and landscaping products, equipment and services including design.

Objectives

Participants in the nursery/landscape CDE will be able to utilize the skills specific to each of the following categories:

- **Nursery/Landscape Principles:** Apply nursery and landscape principles and practices as they impact residential, commercial, public and recreational applications.
- **Plant Materials:** Demonstrate the ability to identify, select and utilize nursery and landscape plants (interior/exterior), landscape materials and turf grasses commonly used in the United States.
- **Plant Disorders:** Demonstrate the ability to identify unhealthy plant conditions due to pests, nutritional/physiological disorders and mechanical/chemical injury.
- **Cultural Practices:** Demonstrate knowledge of the principles and skills involved in propagation, growth requirements, growing techniques, harvesting, sustainability, marketing, and maintenance of interior and exterior landscape plants and turf grasses.
- **Design and Construction:** Demonstrate knowledge of the principles and techniques of landscape design, estimating and construction.
- **Supplies and Equipment:** Demonstrate the ability to identify, select, use and maintain appropriate supplies and equipment for nursery and landscape operations, including equipment and procedures in mechanization and automation.
- **Safety:** Demonstrate knowledge of safety practices in nursery and landscape operations.
- **Interpersonal Relations:** Demonstrate skills in oral business communications.
- **Business Management:** Demonstrate an understanding of marketing principles and business management as well as proper sales and service skills.
- **Records and Reports:** Demonstrate the ability to prepare estimates and complete financial statements.

Event Rules

- It is highly recommended that participants wear appropriate “work clothing” for the activities for the competition.
- Under no circumstances will any participant be allowed to touch or handle plant materials or other specimens during the event except as expressly permitted in practicums.
- Teams will be composed of four members and all four scores will count.

Event Format

Activities and practicums will identify time limits. Time limits given are approximate and subject to change.

Equipment to bring:

- A clean clipboard
- At least two No. 2 pencils
- Additional items allowed, but not required, include the following:
 - A hand pruner or knife.
- Calculators —battery operated, non-programmable and non-scientific (basic five function only). No other calculators can be used during the event.
- An architect's scale
- An engineer's scale
- Hand pruners

TEAM INTERACTIVE EVENTS

Phase 1-A: Team Skills Challenge (150-250 team points) ** Will be completed by the TOP 10 teams**
The Top 10 teams will be determined by the combined score of the individual activities in Phase 2, 3, & 4.

This phase is designed to evaluate the team's ability to apply nursery/landscape knowledge and skills by completing a variety of hands-on and problem-solving activities. No equipment will be started during the event. Teams will be given a list of tasks that may be accomplished individually, in pairs or in larger numbers as determined by the team members according to the skills, experience and preferences of each team member. After completing their tasks, team members may then assist other team members as time allows. The number and type of activities will vary from year to year. General topic areas (not actual tasks) will be communicated in the team orientation packet. Both objective questions and qualitative evaluations may be included in the task scoring. Some examples of activities include the following:

- Determine equipment specifications and demonstrate pre-check operations.
- Demonstrate and/or explain lawn care procedures and equipment operation.
- Demonstrate and/or explain hardscape procedures, e.g., pavers or retaining wall installation, or irrigation pipe assembly.
- Demonstrate and/or explain chemical handling procedures, e.g., fertilizer or pesticide equipment calibration and application.
- Demonstrate and/or explain preparing service receipts.
- Demonstrate and/or explain plant material quality assessment.
- Demonstrate and/or explain pruning maintenance.
- Demonstrate and/or explain safety practices.

Scoring of the separate tasks will be based on correct answers for objective questions or on criteria appropriate for the task recorded by a judge.

INDIVIDUAL EVENTS

Phase 2: General Knowledge Examination (150 points per contestant)

Objective questions will be prepared on topics reflecting subject areas in the objectives. This phase will evaluate the participant's knowledge and understanding of basic horticultural principles in producing, marketing, using and maintaining landscape plants and turf. Participants will record their answers on a scan form. The test will come from the last five years of National FFA Nursery & Landscape exam (2018, 2019, 2021, 2022, 2023)

Phase 3: Identification of Plants, Pests, Disorders, and Beneficial Insect (140 points per contestant)

Participants will identify items selected from the provided list covering the following categories:

- Plant materials will be presented as intact, live specimens, photos, plant parts or any combination.
- Pests and disorders will be presented as a damaged specimen, photograph or preserved specimen, herbarium sheet, insect mount, etc. A "disorder" label will be with an item to designate identification of a problem rather than the plant.
- Beneficial insects and other organisms that benefit the landscape by feeding on harmful organisms.

Each specimen will be designated by a station number. When the participant identifies the item, its name is then located on the identification list. The participant then records the number by that name on a scan form at the respective station number.

Each participant will be provided a copy of the list at the event site. No specimens or items may be touched or handled in any way.

Phase 4: Landscape Estimating (100 points per contestant)

This practicum is designed to evaluate participant knowledge of and ability in the following areas:

- Evaluating a landscape design
- Reading a landscape drawing
- Determining materials needed to execute a landscape plan
- Maintenance, estimating and bidding
- Evaluating factors that affect profitability of a landscape business

A landscape drawing, scratch paper and a calculator will be provided to the participants. There will be objective questions about the landscape plan. Participants will record their answers using a scan form.

Scoring

Participant scores are the sum of the individual phases of the event. Team scores are the sum of all member's scores plus the group portion of the team skills challenge. Possible points are as follows:

Phase	Individual Points	Team Points
General knowledge exam	150	600
Identification	140	560
Landscape estimating	100	400
Team Skills Challenge		150-250
POINT TOTALS	390	1710-1810

TIEBREAKERS

If needed in the case of ties, final placings will be determined by comparing, in order, scores for the following:

Individuals

- General knowledge exam
- Identification
- Landscape estimating

Teams

- Team skills challenge
- Team general knowledge exam score
- Team Identification exam score

References

The following list of references is a guide to team training and is not meant to be all-inclusive.

Some content areas have more than one title listed. This reflects the wide array of quality references available for this event. No single reference is recommended as superior over others in that area. Multiple references are desirable as no single source is comprehensive for the entire nursery/landscape CDE. References other than those listed may be equally valuable resources, along with the many video and computer-based training aids available.

- Nursery/Landscape CDE materials, shop.FFA.org
- Past CDE materials and other resources are available on FFA.org.

GENERAL REFERENCES

- Introduction to Horticulture. (Current edition.) Charles B. Schroeder, Eddie Dean Seagle, Lorrie M. Felton, John M. Ruter, William Terry Kell, and Gerard Krewer. Pearson Prentice Hall, Inc., Englewood Cliffs, N.J. ISBN 0130364134
- Introductory Horticulture. (Current edition.) H. Edward Reiley and Carroll L. Shry, Jr. Clifton Park, N.Y.: Cengage Learning. ISBN 9781435480391
- Ornamental Horticulture. Current edition. Jack Ingels. Cengage Learning., Albany, N.Y. ISBN-13: 9781435498167
- Introduction to Plant and Soil Science and Technology. (Current edition.) Ronald J. Biondo and Jasper S. Lee. Pearson Prentice Hall, Inc., Englewood Cliffs, N.J. ISBN 0813432162

LANDSCAPE

- Landscaping Principles and Practices. (Current edition.) Jack Ingels. Cengage Learning., Albany, N.Y. ISBN 13: 9781428376410
- Landscaping Construction. (Current edition.) David Sauter. Cengage Learning., Albany, N.Y. ISBN 143549718X
- Landscape Training Manuals for Installation, Irrigation, and Maintenance Technicians. (Current edition.) National Association of Landscape Professionals, 950 Herndon Pkwy, Suite 450, Herndon, Va. 20170, https://www.landscapeprofessionals.org/LP/Store/Publications/PUBK_001.aspx

TURF

- Turfgrass Science and Management. (Current edition.) Robert D. Emmons. Cengage Learning, Albany, N.Y. ISBN 10: 1418013307

NURSERY

- Plant Propagation: Principles and Practices. (Current edition.) Hudson T. Hartmann, Fred T. Davies, Jr., Dale E. Kester, and Robert L. Genieve. Pearson Education, Boston. ISBN 0135014492
- American Standard for Nursery Stock. (Current edition.) American Hort, 525 9th St NW Suite 800, Washington, DC. (available as a pdf file free to nonmembers at <https://www.americanhort.org/education/american-nursery-stock-standards/>)

SECONDARY REFERENCES

- Practical Horticulture. (Current edition.) Laura W. Rice and Robert P. Rice. Pearson, Inc., Englewood Cliffs, N.J. ISBN 0135038669
- Manual of Woody Landscape Plants. (Current edition.) Michael A. Dirr. Stipes Publishing Co., Champaign, Ill. ISBN 978-1-58874-868-3
- Know It and Grow It III: A Guide to the Identification and Use of Landscape Plants. (Current edition.) Carl E. Whitcomb. Lacebark, Inc. Stillwater, Okla. ISBN 0961310910
- Manual of Herbaceous Ornamental Plants. (Current edition.) Steven M. Still. Stipes Publishing Co., Champaign, Ill. ISBN 0-87563-433-8.
- Herbaceous Perennial Plants: A Treatise on Their Identification, Culture, and Garden Attributes. (Current edition.) Allan M. Armitage, Stipes Publishing Co., Champaign, Ill. ISBN 978-1-58874-868-3.
- Landscape Construction Procedures, Techniques, and Design. (Current edition.) Floyd Giles. Stipes Publishing Co., Champaign, Ill. ISBN 0875638848

TRADE PERIODICALS

- Turf Magazine plus several other on-line titles. Moose River Media LLC., <https://turfmagazine.com/>
- [Lawn and Landscape .com](http://LawnandLandscape.com)
- [Landscape Management.net](http://LandscapeManagement.net)
- The Edge— NALP's publication, <https://www.landscapeprofessionals.org/LP/LP/Media/planet-news.aspx>
- Nursery Management Magazine, nurserymag.com

INDUSTRY CATALOGS

- Many horticultural supply company catalogs can be utilized for reference support on tools, equipment and supplies that may not be illustrated in other sources.
- A.M. Leonard, Inc., 665 Spiker Road, Piqua, OH 45356 (513/773-2697 or <https://www.amleo.com/>)
- Hummert International, 4500 Earth City Expressway, Earth City, Mo. 63045, 800-325-3055, <https://www.hummert.com>

WEBSITES AND PROBLEM SAMPLES

Additional links and resources will be included as they are developed or identified, along with the following links of the CDE partners:

- <http://www.stihlusa.com/information/>
- <http://www.kubota.com>
- <https://www.upl-ltd.com/us>
- <http://www.treefund.org>
- <https://www.landscapeprofessionals.org/>

Nursery/Landscape Plant Identification

No.	Botanical Name	Common Name
101	<i>Abelia x grandiflora cv.</i>	Glossy Abelia
102	<i>Acer palmatum cv.</i>	Japanese Maple
103	<i>Acer rubrum cv.</i>	Red Maple
104	<i>Acer saccharum cv.</i>	Sugar Maple
105	<i>Aglaonema commutatum</i>	'Chinese Evergreen'
106	<i>Ajuga reptans cv.</i>	Carpet Bugle
107	<i>Amelanchier arborea</i>	Downy Serviceberry
108	<i>Aquilegia x hybrida cv.</i>	Columbine
109	<i>Astilbe hybrid cv.</i>	Astilbe
110	<i>Begonia semperflorens-cultorum</i>	Wax Begonia
111	<i>Berberis x mentorensis</i>	Mentor Barberry
112	<i>Betula nigra</i>	River Birch
113	<i>Buddleia davidii cv.</i>	Butterfly Bush
114	<i>Buxus microphylla cv.</i>	Littleleaf Boxwood
115	<i>Camellia japonica cv.</i>	Common Camellia
116	<i>Cedrus atlantica 'Glauca'</i>	Blue Atlas Cedar
117	<i>Cercis canadensis</i>	Redbud
118	<i>Chaenomeles speciosa cv.</i>	Japanese (Flowering) Quince
119	<i>Clematis hybrid</i>	Clematis
120	<i>Cornus florida cv.</i>	Flowering Dogwood
121	<i>Cotoneaster dammeri</i>	Bearberry Cotoneaster
122	<i>Crataegus phaenopyrum</i>	Washington Hawthorn
123	<i>Cynodon dactylon cv</i>	Bermudagrass
124	<i>Dieffenbachia maculata cv.</i>	Spotted Dumb Cane
125	<i>Dracaena deremensis 'Warneckii'</i>	Striped Dracaena
126	<i>Dracaena fragens 'Massangeana'</i>	Corn Plant
127	<i>Echinaceae purpurea</i>	Purple Coneflower
128	<i>Epipremnum spp.</i>	Pothos
129	<i>Euonymus alatus</i>	Winged Euonymus
130	<i>Euonymus fortunei cv.</i>	Wintercreeper
131	<i>Fraxinus American cv.</i>	White Ash
132	<i>Festuca spp. and cv.</i>	Fescue
133	<i>Ficus benjamina</i>	Benjamin Fig
134	<i>Ficus elastica 'Decora'</i>	Decora Rubber Plant
135	<i>Forsythia x intermedia cv.</i>	Border Forsythia
136	<i>Gaillardia aristata cv.</i>	Common Blanketflower
137	<i>Gardenia jasminoides cv.</i>	Gardenia
138	<i>Ginkgo biloba</i>	Ginkgo, Maidenhair Tree
139	<i>Gleditsia triacanthos inermis cv.</i>	Thornless Honeylocust

No.	Botanical Name	Common Name	No.	Botanical Name	Common Name
140	<i>Hedera helix cv.</i>	English Ivy	162	<i>Liriope spp. cv.</i>	Lilyturf
141	<i>Helleborus orientalis cv.</i>	Lenten Rose	163	<i>Lonicera japonica 'Halliana'</i>	Hall's Japanese Honeysuckle
142	<i>Hemerocallis spp. and cv.</i>	Day lily	164	<i>Magnolia grandiflora cv.</i>	Southern Magnolia
143	<i>Heptapleurum actinophylla</i>	Schefflera, Octopus Tree	165	<i>Magnolia x soulangiana cv.</i>	Chinese (Saucer) Magnolia
144	<i>Heptapleurum arbicola</i>	Dwarf Schefflera	166	<i>Mahonia aquifolia cv.</i>	Oregon Grape
145	<i>Heuchera cv.</i>	Coral Bells, Alumroot	167	<i>Malus spp. and cv.</i>	Flowering Crabapple
146	<i>Hibiscus syriacus cv</i>	Rose of Sharon	168	<i>Miscanthus sinensis cv.</i>	Miscanthus grass
147	<i>Hosta x hybrida cv.</i>	Plantain Lily	169	<i>Myrica pensylvanica</i>	Bayberry
148	<i>Hydrangea macrophylla</i>	Bigleaf Hydrangea	170	<i>Nandina domestica</i>	Heavenly Bamboo
149	<i>Hydrangea quercifolia</i>	Oakleaf Hydrangea	171	<i>Nyssa sylvatica</i>	Sour (Black) Gum
150	<i>Ilex cornuta cv.</i>	Chinese Holly	172	<i>Pachysandra terminalis</i>	Japanese Spurge
151	<i>Ilex crenata cv.</i>	Japanese Holly	173	<i>Paeonia hybrid cv.</i>	Peony
152	<i>Ilex x meserveae cv.</i>	Meserve Holly	174	<i>Parthenocissus tricuspidata</i>	Boston Ivy
153	<i>Impatiens hybrid cv.</i>	Impatiens	175	<i>Pelargonium x hortorum cv.</i>	Zonal Geranium
154	<i>Itea virginica</i>	Sweetspire	176	<i>Pennisetum ruppelia</i>	Fountain Grass
155	<i>Juniperus chinensis cv.</i>	Chinese Juniper	177	<i>Petunia x hybrida cv.</i>	Petunia
156	<i>Juniperus horizontalis cv.</i>	Creeping Juniper	178	<i>Philodendron scandens oxycardium</i>	Heartleaf Philodendron
157	<i>Lagerstroemia indica cv.</i>	Crape Myrtle	179	<i>Phlox paniculate</i>	Garden Phlox
158	<i>Lavandula angustifolia</i> *New 2025	*New 2025 English Lavendar	180	<i>Phlox sublata cv.</i>	Moss Pink
159	<i>Leucanthemum x superbum cv.</i>	Shasta Daisy	181	<i>Picea abies</i>	Norway Spruce
160	<i>Liquidambar styraciflua</i>	Sweet Gum	182	<i>Picea pungens cv.</i>	Colorado (Blue) Spruce
161	<i>Liriodendron tulipifera</i>	Tuliptree	183	<i>Pieris japonica</i>	Lily-of-the-Valley Bush

No.	Botanical Name	Common Name	No.	Botanical Name	Common Name
184	<i>Pinus mugo</i>	Mugo Pine	202	<i>Sedum spp.</i>	Sedum
185	<i>Pinus strobus</i>	Eastern White Pine	203	<i>Spiraea x bumalda</i>	Bumalda Spirea
186	<i>Pinus thunbergiana</i>	Japanese Black Pine	204	<i>Syringa vulgaris cv.</i>	Common Lilac
187	<i>Platanus x acerifolia</i>	London Planetree	205	<i>Taxodium distichum</i>	Bald Cypress
188	<i>Poa pratensis cv.</i>	Kentucky Bluegrass	206	<i>Taxus spp. and cv.</i>	Yew
189	<i>Podocarpus macrophyllus</i>	Southern Yew	207	<i>Thuja occidentalis cv.</i>	American Arborvitae
190	<i>Potentilla fruticosa cv.</i>	Shrubby Cinquefoil	208	<i>Tilia cordata</i>	Littleleaf Linden
191	<i>Prunus laurocerasus cv.</i>	Cherry Laurel	209	<i>Tsuga canadensis</i>	Canadian Hemlock
192	<i>Prunus serrulata</i>	Kwanzan Japanese Flowering Cherry	210	<i>Verbena x hybrida cv.</i>	Garden Verbena
193	<i>Pyracantha coccinea cv.</i>	Firethorn	211	<i>Viburnum trilobum</i>	American Cranberrybush Viburnum
194	<i>Quercus alba</i>	White Oak	212	<i>Viburnum x burkwoodii</i>	Burkwood Viburnum
195	<i>Quercus palustris</i>	Pin Oak	213	<i>Vinca minor cv.</i>	Periwinkle
196	<i>Quercus rubra</i>	Red Oak	214	<i>Viola x wittrockiana cv.</i>	Pansy
197	<i>Rhododendron Hybrid</i>	Exbury Hybrid Azalea	215	<i>Weigela florida</i>	Weigelia
198	<i>Rhododendron x catawbiense</i>	Catawba Hybrid Rhododendron	216	<i>Wisteria sinensis cv.</i>	Chinese Wisteria
199	<i>Rosa spp.</i>	Landscape/Shrub Rose cv.	217	<i>Yucca filamentosa</i>	Adam's Needle
200	<i>Rudbeckia fulgida</i>	Black-eyed Susan			
201	<i>Salvia nemorosa cv.</i>	Meadow Sage			

Pests, Disorders and Beneficial Insects Identification

No.	Item Name
Pests	
218	Aphid
219	Bagworm
220	Borer
221	Leafhopper
222	Leaf Miner
223	Scale
224	Spider Mite
225	Snail/Slug
226	Tick
227	Whitefly
228	White Grub
Diseases	
229	Anthracnose
230	Apple Scab
231	Black Spot
232	Botrytis
233	Canker
234	Cedar-Apple Rust
235	Crown Gall
236	Fire blight
237	Powdery Mildew
238	Root Rot

No.	Item Name
Weeds	
239	Annual Bluegrass
240	Broadleaf Plantain
241	Buckhorn Plantain
242	Chickweed
243	Clovers
244	Crabgrass
245	Dandelion
246	Henbit
247	Nutsedge
248	Oxalis
249	Purslane
250	Poison Ivy
Physiological Problems	
251	Frost/Freeze Injury
252	Iron Deficiency
253	Leaf Scorch (drought/winter burn)
254	Nitrogen Deficiency
255	Pot-Bound Roots
256	String Trimmer Injury
257	2,4-D Injury
Beneficial Insects	
258	Lacewing
259	Lady Beetle
260	Paper Wasp
261	Praying Mantis
262	Spider

Nursery/Landscape Team Skills Challenge

400 POINTS

The Team Skills Challenge should be completed in 45 minutes valued at 400 points. Each skill may take up to 20 minutes to complete. It is the responsibility of the team to determine how to split their team to complete the challenges presented within the rotation.

Chapter		State	Team Number
A.	Score =	points of	possible
B.	Score =	points of	possible
C.	Score	points of	possible
D.	Score	points of	possible
E.	Score	points of	possible
F.	Score	points of	possible
G.	Score	points of	possible
H.	Score	points of	possible
Total Points		of	150-250 Points Possible

Judge's Name	Judge's Signature	Date
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Skill Number	Skill Title	Page	Points
1	Plant Layout	17	100
19	Service Receipt	18	50
21	Shrub/Perennial Installation	19	100

Skills Event 1

PLANT LAYOUT SCORECARD

Name(s) State Team Number

Criteria	Points Possible	Points Earned
Plant placed within 6 inches +/- of correct placement (5 points each)	20	
Plant faced properly (5 points each)	20	
Plant handled properly (5 points each)	10	
Correct Viewpoint	5	
Explain Plant Care	5	
Safely and properly followed lifting procedures (5 pts per student)	10	
Safety glasses worn (5 pts per student)	10	
Gloves worn	10	
Completed Design	10	
TOTAL POINTS EARNED OUT OF 100 POSSIBLE		

Judge's Comments

Judge's Name Judge's Signature Date

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Skills Event 19

SERVICE RECEIPT SCORECARD

Name(s) _____ State _____ Team Number _____

Criteria	Points Possible	Points Earned
Recorded crew time properly per scenario provided	10	
Checked off all services rendered	5	
Recorded actual pre-emergent herbicide and fertilizer calculations	5	
Recorded actual mulch calculation (<i>in cubic yards</i>)	5	
Recorded actual flats installed	5	
Recorded comments about irrigation head	5	
Explained annual care to client	10	
Crew leader signed off on service receipt	5	

TOTAL POINTS EARNED OUT OF 50 POSSIBLE

Judge's Comments

Judge's Name _____ Judge's Signature _____ Date _____

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Skills Event 21

SHRUB/PERENNIAL INSTALLATION SCORECARD

Name(s) _____

State _____

Team Number _____

Criteria	Points Possible	Points Earned
Plants placed within 2" +/- of correct placement (5 points each)	15	
Plants faced properly to a maximum of 15 points (5 points each)	15	
Plant handled properly to a maximum of 15 points (5 points each)	15	
Correct viewpoint	5	
Explained proper plant care (watering- 5 points and pruning - 5 points)	10	
Mulch applied properly	10	
Safely and properly followed lifting procedures	10	
Safety glasses and gloves used	10	
Finished planting per design	10	

TOTAL POINTS EARNED OUT OF 100 POSSIBLE

Judge's Comments

Judge's Name _____

Judge's Signature _____

Date _____

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