

West TN FFA

**Nursery/
Landscape
Handbook**

2017-2021

Event Purpose

The purpose of the West 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

- **Nursery/Landscape Principles:** To apply nursery and landscape principles and practices as they impact residential, commercial, public and recreational applications.
- **Plant Materials:** To 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:** To demonstrate the ability to identify unhealthy plant conditions due to pests, nutritional/physiological disorders and mechanical/chemical injury.
- **Cultural Practices:** To 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:** To demonstrate knowledge of the principles and techniques of landscape design, estimating and construction.
- **Supplies and Equipment:** To 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:** To demonstrate knowledge of safety practices in nursery and landscape operations.

Event Rules

- Each team will be comprised of four team members. The four individual scores and the team activity and skills challenge scores will be used to determine the final team score.
- FFA Official Dress is NOT required. It is highly recommended that the team should dress in appropriate “work clothing”.
- 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 certain practicums.
- Any participant in possession of an electronic device other than a calculator and electronic speller, in the event area is subject to disqualification.

Event Format

Each participant must have the following individual tools the competition:

- A clear, transparent clipboard with no notes.
- At least two No. 2 pencils
- A ball-point or felt-tip pen
- Horticulture Scantron Cards (105482)
- A non-programmable calculator
- Calculators used in this event should be battery operated, nonprogrammable and silent with large keys and large displays. Calculators may have only these functions: addition, subtraction, multiplication, division, equals, percent, square root, +/- key and one memory register. No other calculators are allowed to be used during the event.
- An architect's scale
- An engineer's scale

Additional items allowed but not required, include the following:

- A pocket-size dictionary or electronic speller and a hand pruner or knife.
- Teams may also be requested to supply one or more laptop computers. Coaches will be notified if laptops are needed in advance.

INDIVIDUAL EVENTS

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. All test questions will come from the previous five years National Nursery/Landscaping General Knowledge Exams located on FFA.ORG. A test bank of the five past years' national exams will be maintained on the Downloads page of tnffa.org and updated annually.

IDENTIFICATION OF PLANTS, PESTS, DISORDERS, BENEFICIAL INSECTS, EQUIPMENT AND SUPPLIES (150 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.

- Equipment and supplies will be either an intact item or photograph.
- 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.

LANDSCAPE ESTIMATING (100 POINTS PER CONTESTANT)

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

- 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 and scratch paper 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

Team scores are the sum of all members' scores. Possible points are as follows:

PHASE	Member	Team
1. General Knowledge Exam	150	600
2. Identification	150	600
3. Estimating	100	400
Total	400	1,600

TIEBREAKERS

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

1. General Knowledge Exam
2. Identification
3. Landscape Estimating

References

The following list of references is a guide to team training.

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 event. References other than those listed may be equally valuable resources, along with the many video and computer-based training aids available.

NATIONAL FFA CORE CATALOG

- Nursery/Landscape CDE materials: <http://shop.ffa.org>
- CDE Q&A's: *FFA.org*

GENERAL REFERENCES

- Previous five years National Written Exams located at FFA.ORG
- Introduction to Horticulture. Current edition. Charles B. Schroeder, Eddie Dean Seagle, Lorrie M. Felton, John M. Ruter, William Terry Kell, and Gerard Krewer. Prentice-Hall, Inc., Englewood Cliffs, NJ. ISBN 0130364134
- Introductory Horticulture. Current edition. H. Edward Reiley and Carroll L. Shry, Jr. Clifton Park, NY: Delmar Cengage Learning. ISBN 9781435480391
- Ornamental Horticulture. Current edition. Jack Ingels. Delmar Publishers Inc., Albany, NY. ISBN-13: 9781435498167
- Introduction to Plant and Soil Science and Technology. Current edition. Ronald J. Biondo and Jasper S. Lee. Prentice-Hall, Inc., Englewood Cliffs, NJ. ISBN 0813432162

LANDSCAPE

- Landscaping Principles and Practices. Current edition. Jack Ingels. Delmar Publishers Inc., Albany, NY. ISBN 13: 9781428376410
- Landscaping Construction. Current edition. David Sauter. Delmar Publishers Inc., Albany, NY. ISBN 143549718X

- Introduction to Landscaping: Design, Construction, and Maintenance. Current edition. Ronald J. Biondo and Charles B. Schroeder. Prentice-Hall, Inc., Englewood Cliffs, NJ. ISBN 0133626385
- Landscape Training Manuals for Installation, Irrigation, and Maintenance Technicians. Current edition . National Association of Landscape Professionals, 950 Herndon Pkwy, Suite 450, Herndon, VA 20170 <http://www.landscapetechnician.net>

TURF

- Turfgrass Science and Management. Current edition. Robert D. Emmons. Delmar Publishers Inc., Albany, NY. ISBN 10: 1418013307
- Turfgrass Management. Current edition. A.J. Turgeon. Prentice-Hall, Inc. Boston. ISBN 0137074352

NURSERY

- Plant Propagation: Principles and Practices. Current edition. Hudson T. Hartmann, Fred T. Davies, Jr., Dale E. Kester, and Robert L. Genieve. Prentice Hall, Boston. ISBN 0135014492
- American Standard for Nursery Stock. Current edition. American Association of Nurserymen, Inc., 1250 I St., NE, Suite 500, Washington, DC. (available as a pdf file free to nonmembers at http://americanhort.org/documents/ANSI_Nursery_Stock_Standards_AmericanHort_2014.pdf)

SECONDARY REFERENCES

- Practical Horticulture. Current edition. Laura W. Rice and Robert P. Rice. Prentice-Hall, Inc., Englewood Cliffs, NJ. ISBN 0135038669
- Landscape Design: A Practical Approach. Current edition. Leroy G. Hannebaum. PrenticeHall, Inc., Upper Saddle River, NJ. ISBN 0130105813
- Manual of Woody Landscape Plants. Current edition. Michael A. Dirr. Stipes Publishing Co., Champaign, IL. ISBN 978-1-58874-868-3
- A Field Guide to Woody Landscape Plants of the Southeast. Current edition. Rex Bishop. Tea Olive Productions. Marietta, GA. ISBN 097253430X
- Nursery Management: Administration and Culture. Current edition. Harold Davidson, Roy Mecklenburg, and Curtis Peterson. Prentice-Hall, Upper Saddle River, NJ. ISBN 0138579962
- Landscape Plants, Their Identification, Culture, and Use. Current edition. Ferrell M. Bridwell. Delmar Thomson Learning, Albany, NY. ISBN 0766836347
- Know It and Grow It III: A Guide to the Identification and Use of Landscape Plants. Current

edition. Carl E. Whitcomb. Lacebark, Inc. Stillwater, OK. ISBN 0961310910

- Manual of Herbaceous Ornamental Plants. Current edition. Steven M. Still. Stipes Publishing Co., Champaign, IL. 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, IL. ISBN 978-1-58874-868-3.
- Landscape Construction Procedures, Techniques, and Design. Current edition. Floyd Giles. Stipes Publishing Co., Champaign, IL. ISBN 0875638848
- The Turf Problem Solver: Case Studies and Solutions for Environmental, Cultural, and Pest Problems. Current edition. A.J. Turgeon and J.M. Vargas, Jr. J. Wiley, Hoboken, NJ. ISBN 9780471736196.

TRADE PERIODICALS

- American Nurseryman. American Nurserymen Publishing Co., Chicago, IL.
<http://www.amerinursery.com/>
- Grounds Maintenance. Primedia, Overland Park, KS., www.grounds-mag.com/
- Turf Magazine, plus several other on-line titles. Moose River Media LLC.
www.turfmagazine.com/
- Interiorscape.com: A Forum for Interior Plantscape Professionals. www.interiorscape.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
<http://www.amleo.com/index1.html>)
- Hummert International, 4500 Earth City Expressway, Earth City, Mo. 63045, 800-325-3055
/phone <https://www.hummert.com>

WEBSITES AND PROBLEM SAMPLES

Visit the National FFA website at <http://www.ffa.org> for information on career development

events, access to prior-year event materials and links to additional study aids. Additional links and resources will be included as they are developed or identified, along with the following links of the CDE sponsors:

- <http://www.stihlusa.com/information/>
- <http://www.kubota.com>
- <http://www.arysta-na.com>
- <http://www.treefund.org>
- <https://www.landscapeprofessionals.org/>

Nursery/Landscape Plant Identification

NAME			MEMBER NUMBER	
CHAPTER		STATE		

No.	Botanical Name	Common Name		cv.	
101	<i>Abelia x grandiflora</i>	Glossy Abelia	128	<i>Dracaena deremensis</i> 'Warneckii'	Striped Dracaena
102	<i>Abies concolor</i>	White Fir	129	<i>Dracaena fragrans</i> 'Massangeana'	Corn Plant
103	<i>Acer palmatum</i> cv.	Japanese Maple	130	<i>Echinacea purpurea</i>	Purple Coneflower
104	<i>Acer platanoides</i> cv.	Norway Maple	131	<i>Epipremnum</i> spp.	Pothos
105	<i>Acer rubrum</i> cv.	Red Maple	132	<i>Euonymus alatus</i>	Winged Euonymus
106	<i>Acer saccharum</i> cv.	Sugar Maple	133	<i>Euonymus fortunei</i> cv.	Wintercreeper
107	<i>Ajuga reptans</i> cv.	Carpet Bugle	134	<i>Fagus sylvatica</i> cv.	European Beech
108	<i>Antirrhinum majus</i> cv.	Snapdragon	135	<i>Festuca</i> spp. and cv.	Fescue
109	<i>Aquilegia x hybrida</i> cv.	Columbine	136	<i>Ficus benjamina</i>	Benjamin Fig
110	<i>Amelanchier arborea</i>	Downy Serviceberry	137	<i>Ficus elastica</i> 'Decora'	Decora Rubber Plant
111	<i>Astilbe hybrid</i> cv.	Astilbe	138	<i>Forsythia x intermedia</i> cv.	Border Forsythia
112	<i>Begonia</i> <i>semperflorens-cultorum</i>	Wax Begonia	139	<i>Fraxinus americana</i> cv.	White Ash
113	<i>Berberis x mentorensis</i>	Mentor Barberry	140	<i>Gaillardia aristata</i> cv.	Common Blanketflower
114	<i>Betula nigra</i>	River Birch	141	<i>Gardenia jasminoides</i> 'Fortuniana'	Common Gardenia
115	<i>Brassaia actinophylla</i>	Schefflera, Octopus Tree	142	<i>Ginkgo biloba</i>	Ginkgo, Maidenhair Tree
116	<i>Buxus microphylla</i> cv.	Littleleaf Boxwood	143	<i>Gleditsia triacanthos</i> <i>inermis</i> cv.	Thornless Honeylocust
117	<i>Camellia japonica</i> cv.	Common Camellia	144	<i>Hedera helix</i> cv.	English Ivy
118	<i>Cedrus atlantica</i> 'Glaucá'	Blue Atlas Cedar	145	<i>Hemerocallis</i> spp. and cv.	Day lily
119	<i>Cercis canadensis</i>	Redbud	146	<i>Hosta x hybrida</i> cv.	Plaintain Lily
120	<i>Chaenomeles speciosa</i> cv.	Japanese (Flowering) Quince	147	<i>Hydrangea quercifolia</i>	Oakleaf Hydrangea
121	<i>Clematis hybrid</i>	<i>Clematis</i>	148	<i>Hydrangea macrophylla</i>	Bigleaf Hydrangea
122	<i>Cornus florida</i> cv.	Flowering Dogwood	149	<i>Ilex cornuta</i> cv.	Chinese Holly
123	<i>Cotoneaster dammeri</i>	Bearberry Cotoneaster	150	<i>Ilex crenata</i> cv.	Japanese Holly
124	<i>Cotoneaster divaricatus</i>	Spreading Cotoneaster	151	<i>Ilex x meserveae</i> cv.	Meserve Holly
125	<i>Crataegus phaenopyrum</i>	Washington Hawthorn	152	<i>Impatiens hybrid</i> cv.	Impatiens
126	<i>Cynodon dactylon</i> cv	Bermudagrass	153	<i>Iris x germanica</i> <i>florentina</i> cv.	Bearded Iris
127	<i>Dieffenbachia maculata</i>	Spotted Dumb Cane			

154	<i>Juniperus chinensis</i> cv.	Chinese Juniper	186	<i>Podocarpus macrophyllus</i>	Southern Yew
155	<i>Juniperus horizontalis</i> cv.	Creeping Juniper	187	<i>Potentilla fruticosa</i> cv.	Shrubby Cinquefoil
156	<i>Lagerstroemia indica</i> cv.	Crape Myrtle	188	<i>Prunus laurocerasus</i> cv.	Cherry Laurel
157	<i>Leucanthemum x superbum</i> cv.	Shasta Daisy	189	<i>Prunus serrulata</i> 'Kwanzan'	Kwanzan Japanese Flowering Cherry
158	<i>Liquidambar styraciflua</i>	Sweet Gum	190	<i>Pyracantha coccinea</i> cv.	Firethorn
159	<i>Liriodendron tulipifera</i>	Tuliptree	191	<i>Quercus alba</i>	White Oak
160	<i>Liriope</i> spp. cv.	Lilyturf	192	<i>Quercus palustris</i>	Pin Oak
161	<i>Lonicera japonica</i> 'Halliana'	Hall's Japanese Honeysuckle	193	<i>Quercus rubra</i>	Red Oak
162	<i>Magnolia grandiflora</i> cv.	Southern Magnolia	194	<i>Rhododendron x catawbiense</i>	Catawba Hybrid Rhododendron
163	<i>Magnolia x soulangiana</i> cv.	Chinese (Saucer) Magnolia	195	<i>Rhododendron Hybrid</i>	Exbury Hybrid Azalea
164	<i>Mahonia aquifolia</i> cv.	Oregon Grape	196	<i>Rosa</i> spp.	Landscape/Shrub Rose cv.
165	<i>Malus</i> spp. and cv.	Flowering Crabapple	197	<i>Salvia nemorosa</i> cv.	Meadow Sage
166	<i>Myrica pensylvanica</i>	Bayberry	198	<i>Sedum</i> spp.	Sedum
167	<i>Nandina domestica</i>	Heavenly Bamboo	199	<i>Solenostemon scutellarioides</i>	Coleus
168	<i>Narcissus pseudonarcissus</i> cv.	Daffodil	200	<i>Sorbus aucuparia</i>	European Mountain Ash
169	<i>Nyssa sylvatica</i>	Sour (Black) Gum	201	<i>Spiraea x bumalda</i>	Bumalda Spirea
170	<i>Pachysandra terminalis</i>	Japanese Spurge	202	<i>Syringa vulgaris</i> cv.	Common Lilac
171	<i>Paeonia hybrid</i> cv.	Peony	203	<i>Tagetes</i> spp. cv.	Marigold
172	<i>Parthenocissus tricuspidata</i>	Boston Ivy	204	<i>Taxodium distichum</i>	Bald Cypress
173	<i>Pelargonium x hortorum</i> cv.	Zonal Geranium	205	<i>Taxus</i> spp. and cv.	Yew
174	<i>Pennisetum ruppelia</i>	Fountain Grass	206	<i>Thuja occidentalis</i> cv.	American Arborvitae
175	<i>Petunia x hybrida</i> cv.	Petunia	207	<i>Tilia cordata</i>	Littleleaf Linden
176	<i>Philodendron scandens oxycardium</i>	Heartleaf Philodendron	208	<i>Tsuga canadensis</i>	Canadian Hemlock
177	<i>Picea abies</i>	Norway Spruce	209	<i>Tulipa</i> spp. cv.	Tulip
178	<i>Picea pungens</i> cv.	Colorado (Blue) Spruce	210	<i>Verbena x hybrida</i> cv.	Garden Verbena
179	<i>Pieris japonica</i>	Lily-of-the-Valley Bush	211	<i>Viburnum x burkwoodii</i>	Burkwood Viburnum
180	<i>Pinus mugo</i>	Mugo Pine	212	<i>Viburnum trilobum</i>	American Cranberrybush Viburnum
181	<i>Pinus strobus</i>	Eastern White Pine	213	<i>Vinca minor</i> cv.	Periwinkle
182	<i>Pinus sylvestris</i>	Scotch Pine	214	<i>Viola x wittrockiana</i> cv.	Pansy
183	<i>Pinus thunbergiana</i>	Japanese Black Pine	215	<i>Wisteria sinensis</i> cv.	Chinese Wisteria
184	<i>Platanus x acerifolia</i>	London Planetree	216	<i>Yucca filamentosa</i>	Adam's Needle
185	<i>Poa pratensis</i> cv .	Kentucky Bluegrass			

Pests, Disorders and Beneficial Insects Identification

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

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

Equipment and Supplies Identification

No.	Item Name
260	anvil-and-blade pruner
261	ball cart (B&B truck)
262	bark mulch
263	bow saw
264	broadcast (cyclone) spreader
265	bubbler head, irrigation
266	bulb planter
267	bunker rake
268	burlap
269	compressed air sprayer
270	core aerifier
271	chain saw
272	cut-off machine
273	drip emitter, irrigation
274	dry-lock wall block
275	edger (power or hand)
276	edging
277	erosion netting
278	fertilizer injector
279	fertilizer tablet
280	garden (spading) fork
281	garden (bow) rake
282	grafting band
283	grafting knife
284	granular fertilizer
285	gravity (drop) spreader
286	ground/pelleted limestone
287	hedge shears
288	hoe
289	hook-and-blade pruners
290	hose-end repair fitting
291	hose-end sprayer
292	hose-end washer
293	hose repair coupling
294	impact sprinkler
295	irrigation ring tool
296	landscape fabric
297	leaf rake
298	loppers
299	mattock
300	measuring wheel
301	mist nozzle (mist bed)
302	mower blade balancer
303	nursery container
304	oscillating sprinkler
305	peat moss
306	pick axe
307	planting/earth/soil auger
308	pole pruner
309	polyethylene pipe
310	pop-up irrigation head
311	post-hole digger
312	power blower
313	power hedge trimmer
314	pot-in-pot units
315	pump sprayer
316	propagation mat
317	pruning saw
318	quick coupler
319	quick coupler head adapter
320	reel mower
321	resin-coated fertilizer
322	rotary mower
323	rototiller
324	round point shovel
325	scoop shovel
326	shade fabric
327	sharpening stone
328	siphon proportioner
329	soaker hose
330	soil sampling tube
331	solenoid valve
332	spade
333	sphagnum moss
334	square point (flat) shovel
335	string trimmer
336	thatch rake
337	tree caliper
338	tree wrap
339	trowel
340	vertical mower
341	water breaker
342	wire tree basket