

# Nursery/ Landscape Handbook

#### Purpose

To stimulate career interest, encourage proficiency development, and recognize excellence in students of nursery practices and landscaping through the agricultural education curriculum.

## **Objectives**

- To demonstrate the ability to identify nursery and landscape plant materials and turf grasses commonly used in the United States.
- To demonstrate the ability to identify unhealthy plant conditions due to pests, nutritional or physiological disorders, and mechanical or chemical injury.
- To demonstrate knowledge of the principles and skills involved in propagation, growth requirements, growing techniques, harvesting, marketing and maintenance of nursery plants and landscape turf.
- To demonstrate knowledge of the principles and techniques of landscape design and construction.
- 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.
- To demonstrate knowledge of safety practices in nursery and landscape operations.
- To demonstrate skills in oral and written business communications.
- To demonstrate understanding of marketing principles and proper sales and service skills.
- To demonstrate the ability to prepare accurate and legible records and reports and to interpret business documents.

## **General Rules**

- 1. Participants may wear modified official FFA dress for this event (black slacks or jeans for females or black jeans for males and appropriate footwear, appropriate clothing for inclement weather).
- 2. Four persons will constitute an official team for the Nursery/Landscape Career Development Event. However, only three of the individual scores will be used in the team score tabulation. In addition, no alternates will be allowed in the Nursery/Landscape Event.
- 3. This State CDE will be conducted by the College of Southern Idaho in conjunction with State FFA Leadership Conference.
- 4. Materials participants will need to provide:
  - Pruning shears
  - Pruning knife
  - Gloves
  - Safety glasses
  - Engineers & Architects scale
  - Battery operated calculator (scientific calculators not allowed)
- 5. Entry fees to cover the cost of hosting the event will be assessed.

## **Event Format**

#### PHASE 1: IDENTIFICATION OF PLANTS, PESTS, DISORDERS, & SUPPLIES (150 POINTS PER CONTESTANT)

Participants will identify 50 items selected from the provided list covering the following categories:

Plant Materials Plant Pests (Insects, Diseases, Weeds) Plant Disorders Equipment & Supplies Plants to identify will be presented as intact, live specimens. Pest and disorder and equipment & supply items may be presented as an intact specimen, photograph or preserved specimen. When a problem must be presented with an affected plant, a "Disorder" label will be with the item to designate the identification of the problem rather than the plant.

When participants have identified the specimen, the appropriate number of the specimen as listed on attached form is to be written on a scorecard. Three points will be awarded for each specimen correctly identified. Each participant will be allowed 50 minutes to complete this phase of the contest. No specimens may be touched or handled in any way.

#### PHASE 2: GENERAL KNOWLEDGE EXAMINATION (150 POINTS PER CONTESTANT)

- Thirty (30) objective-type multiple-choice questions will be selected from the areas listed below. This phase of the event will test the participant's knowledge and understanding of the basic principles relating to the following areas of horticulture (for example: questions for the plant materials area may deal with such features as anatomy of a flower or leaf, physiology of specific types of plants important to the horticultural industry, etc.) The contents of the exam will be extracted from the previous five (5) years of written exams from the National Nursery and Landscape Career Development Event. National exams as reference materials will not utilize the most recent National Convention test items. Areas for testing include:
  - a. Plant materials
  - b. Plant disorders
  - c. Cultural practices
  - d. Landscape design and construction
  - e. Supplies and equipment
  - f. Safety
  - g. Equipment operation and maintenance
  - h. Interpersonal relations (skills)
  - i. Salesmanship
  - j. Records and reports

Each participant will be allowed fifteen minutes to complete this phase. Each correct answer has a value of five points.

#### PHASE 3: LANDSCAPE ESTIMATING (150 POINTS PER CONTESTANT)

Participants will be furnished with a landscape drawing and scratch paper. The student will answer fifteen (15) objective questions about the landscape drawing, such as, determine the cost of fencing, cost of patio bricks, or the number of yards of sod required to cover a specific area. Each answer has a value of 10 points. Students should furnish both an architect and engineers scale and a battery- operated electronic calculator (if desired). Fifty minutes will be allowed for this practicum.

Practicums will include Pruning every year and rotate others as follows:

#### 2024 - Pruning, Potting and Measuring 2025- Pruning, Measuring and Propagation 2026- Pruning, Propagation and Potting

- 1. **Potting Nursery Stock (50 points)** Each participant will be provided with five liner stock plants of 5-7 inches in height. Participants will pot the plants in one-quart nursery containers using standard practices. Label, pencils, soil, containers, and hand pruners will be provided. Ten minutes will be allowed for completion of this practicum. An official will observe and score each participant during this practicum. Scoring criteria are presented on the "Potting Nursery Stock" scorecard.
- 2. **Measuring Nursery Stock (50 points)** Each participant will be asked to measure five (5) nursery plants for market size (height, spread or caliper as appropriate) according to the American Standard for Nursery Stock for BR and B&B evergreen and deciduous trees and shrubs. A caliper and measuring rule will be provided. Plants presented in containers will be assumed as growing in the field, and a label will advise on whether it is to be dug BR or B&B. Ten minutes will be allowed for completion of this practicum.
- 3. **Pruning Nursery Stock (50 points) (Every Year)** One or more nursery plants will be displayed with ten (10) points marked for possible pruning cuts. No plants will actually be pruned. Participants are to evaluate each labeled point and decide if the plant part should be pruned or not for improvement of the plant's health, form and overall quality. Five (5) positive cuts will be given point values equaling fifty (50). Five (5) negative cuts will be given zero (0) points. Participants will be given points based on the number of positive cuts selected. Ten minutes will be allowed for the completion of this practicum.
- 4. Propagating Nursery Stock (50 points) Each participant will be furnished a stock plant, rooting flat and media, rooting hormone, and label and a marking pen. Participants are to prepare the designated softwood or hardwood cuttings and place them in the media with a single label. Ten minutes will be allowed for making and sticking five cuttings. An official will observe and score each participant during this practicum. Scoring criteria are presented on the "Propagating Nursery Stock" scorecard.

### Scoring

Participant scores are the sum of the seven individual phases of the event.

Team scores are the sum of all members scores plus the group portion of the team activity and team challenge. Possible points are as follows:

PHASE	Member	Team
1. Identification	150	450
2. Landscape Estimating	150	450
3. General Knowledge	150	450
PRACTICUMS (3 OF THE 4)	Member	Team
1. Practicum 1 Pruning	50	150
2. Practicum 2	50	150
3. Practicum 3	50	150
Individual Total	600	
TEA	1,800	

#### **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

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

- 1. Team General Knowledge Exam score
- 2. Identification
- 3. Landscape Estimating

# Nursery/Landscape Plant Identification (Botanical Name)

	Common Name	Botanical Name		Common Name	Botanical Name
101	Japanese Maple	Acer palmatum	138	Hall's Japanese Honeysuckle	Lonicera japonica 'Halliana'
102	Norway Maple	Acer platanoides	139	Oregon Grape	Mahonia aquifolia cv.
103	Carpet Bugle	Ajuga reptans cv.	140	Flowering Crabapple	Malus spp. And cv.
104	Columbine	Aquilegia x hybrida cv.	141	Daffodil	Narcissus pseudonarcissus cv.
105	Astilbe	Astilbe hybrid cv.	142	Japanese Spurge	Pachysandra terminalis
106	Mentor Barberry	Berberis x mentorensis	143	Peony	Paeonia hybrid cv.
107	River Birch	Betula nigra	144	Boston Ivy	Parthenocissus tricuspidata
108	Butterfly Bush	Buddleia davidii cv.	145	Fountain Grass	Pennisetum ruppelia
109	Littleaf Boxwood	Buxus microphylla cv.	146	Norway Spruce	Picea abies
110	Blue Atlas Cedar	Cedrus atlantica 'Glauca'	147	Colorado Blue Spruce	Picea pungens cv.
111	Redbud	Cercis canadensis	148	Lily-of-the-Valley- Bush	Pieris japonica
112	Japanese (Flowering) Quince	Chaenomeles speciosa cv.	149	Mugo Pine	Pinus mugo
113	Shasta Daisy	Chrysanthemum x superbum cv.	150	Eastern White Pine	Pinus strobus
114	Clematis	Clematis hybrid	151	Scotch Pine	Pinus sylvestris
115	Flowering Dogwood	Cornus florida cv.	152	London Planetree	Platanus x acerifolia
116	Bearberry Cotoneaster	Cotoneaster dammeri	153	Kentucky Bluegrass	Poa pratensis cv.
117	Washington Hawthorn	Crataegus phaenopyrum	154	Shrubby Cinquefoil	Potentilla fruticosa cv.
118	Purple Coneflower	Echinacea purpurea	155	Flowering Cherry	Prunus serrulata, Kwanzan' Jap.
119	Winged Euonymus	Euonymus alatus	156	Firethorn	Pyracantha coccinea cv.
120	Wintercreeper	Euonymus fortunei cv.	157	Pin Oak	Quercus palustris
121	European Beech	Fagus sylvatica cv.	158	Red Oak	Quercus rubra
122	Fescue	Festuca spp. And cv.	159	Catawba Hybrid Rhododendron	Rhododendron x catawbiense
123	Border Forsythia	Forsythia x intermedia cv.	160	Hybrid Tea Rose	Rosa spp. Class Hybrid Tea cv.
124	Common Blanketflower	Gallardia aristata cv.	161	Black-eyed Susan	Rudbeckia fulgida
125	Ginkgo, Maidenhair Tree	Ginkgo biloba	162	Meadow Sage	Salvia nemorosa cv.
126	Thornless Honeylocust	Gleditsia triacanthos inermis cv.	163	Sedum	Sedum spurium cv.
127	English Ivy	Hedera helix cv.	164	European Mountain Ash	Sorbus aucuparia
128	Daylily	Hemerocallis spp. and cv.	165	Bumalda Spirea	Spirea x bumalda
129	Coral Bells, Alumroot	Heuchera cv	166	Common Lilac	Syringa vulgaris cv.
130	Plantain Lily	Hosta x hybrida cv.	167	Yew	Taxus spp. And cv.
131	Bigleaf Hydrangea	Hydrangea macrophylla	168	American Arborvitae	Thuja occidentalis cv.
132	Meserve Holly	Ilex x meserveae	169	Littleleaf Linden	Tilia cordata
133	Bearded Iris	Iris x germanica florentina cv.	170	Tulip	Tulipa spp. Cv.
134	Chinese Juniper	Juniperus chinensis cv.	171	American Cranberry Bush	Viburnum trilolbum
135	English lavender	Lavendula angustifolia cv.	172	Periwinkle	Vinca minor cv.
136	Sweet Gum	Liquidambar styraciflua	173	Chinese Wisteria	Wisteria sinensis cv.
137	Tuliptree	Liriodendron tulipifera	174	Adam's Needle	Yucca filamentosa

# **Nursery/Landscape Plant Identification (Common Name)**

	Common Name	Botanical Name		Common Name	Botanical Name
174	Adam's Needle	Yucca filamentosa	138	Hall's Japanese Honeysuckle	Lonicera japonica 'Halliana'
168	American Arborvitae	Thuja occidentalis cv.	160	Hybrid Tea Rose	Rosa spp. Class Hybrid Tea cv.
171	American Cranberry Bush	Viburnum trilolbum	112	Japanese (Flowering) Quince	Chaenomeles speciosa cv.
105	Astilbe	Astilbe hybrid cv.	101	Japanese Maple	Acer palmatum
116	Bearberry Cotoneaster	Cotoneaster dammeri	142	Japanese Spurge	Pachysandra terminalis
133	Bearded Iris	Iris x germanica florentina cv.	153	Kentucky Bluegrass	Poa pratensis cv.
131	Bigleaf Hydrangea	Hydrangea macrophylla	148	Lily-of-the-Valley- Bush	Pieris japonica
161	Black-eyed Susan	Rudbeckia fulgida	109	Littleaf Boxwood	Buxus microphylla cv.
110	Blue Atlas Cedar	Cedrus atlantica 'Glauca'	169	Littleleaf Linden	Tilia cordata
123	Border Forsythia	Forsythia x intermedia cv.	152	London Planetree	Platanus x acerifolia
144	Boston Ivy	Parthenocissus tricuspidata	162	Meadow Sage	Salvia nemorosa cv.
165	Bumalda Spirea	Spirea x bumalda	106	Mentor Barberry	Berberis x mentorensis
108	Butterfly Bush	Buddleia davidii cv.	132	Meserve Holly	Ilex x meserveae
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173	Chinese Wisteria	Wisteria sinensis cv.	139	Oregon Grape	Mahonia aquifolia cv.
114	Clematis	Clematis hybrid	143	Peony	Paeonia hybrid cv.
147	Colorado Blue Spruce	Picea pungens cv.	172	Periwinkle	Vinca minor cv.
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129	Coral Bells, Alumroot	Heuchera cv	158	Red Oak	Quercus rubra
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150	Eastern White Pine	Pinus strobus	151	Scotch Pine	Pinus sylvestris
127	English Ivy	Hedera helix cv.	163	Sedum	Sedum spurium cv.
135	English lavender	Lavendula angustifolia cv.	113	Shasta Daisy	Chrysanthemum x superbum cv.
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122	Fescue	Festuca spp. And cv.	126	Thornless Honeylocust	Gleditsia triacanthos inermis cv.
156	Firethorn	Pyracantha coccinea cv.	170	Tulip	Tulipa spp. Cv.
155	Flowering Cherry	Prunus serrulata, Kwanzan' Jap.	137	Tuliptree	Liriodendron tulipifera
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115	Flowering Dogwood	Cornus florida cv.	119	Winged Euonymus	Euonymus alatus
145	Fountain Grass	Pennisetum ruppelia	120	Wintercreeper	Euonymus fortunei cv.
125	Ginkgo, Maidenhair Tree	Ginkgo biloba	167	Yew	Taxus spp. And cv.

## **Pests and Disorders Identification**

No.	Item Name
Pests	
175	Aphid
176	Bagworm
177	Borer
178	Leafhopper
179	Leaf Miner
180	Scale
181	Spider Mite
182	Snail/Slug
183	Whitefly
184	White Grub
Diseas	ses
185	Anthracnose
186	Apple Scab
187	Black Spot
188	Botrytis
189	Canker
190	Cedar-Apple Rust
191	Crown Gall
192	Fireblight
193	Powdery Mildew
194	Root Rot

No.	Item Name			
Weeds				
195	Annual Bluegrass			
196	Broadleaf Plantain			
197	Buckhorn Plantain			
198	Chickweed			
199	Crabgrass			
200	Dandelion			
201	Henbit			
202	Nutsedge			
203	Oxalis			
204	Purslane			
205	Clovers			
Physic	ological Problems			
206	Frost/Freeze Injury			
207	Iron Deficiency			
208	Leaf Scorch (drought/winter burn)			
209	Nitrogen Deficiency			
210	Pot-Bound roots			
211	String Trimmer Injury			
212	2,4-D Injury			
Benef	icial Insects			
213	Praying Mantis			
214	Lady Beetle			
215	Paper Wasp			
216	Lacewing			
217	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 tank pressurized
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

293 hose repair coupling

No.	Item Name
294	impact sprinkler
295	landscape fabric
296	leaf rake
297	loppers
298	mattock
299	measuring wheel
300	mist nozzle (mist bed)
301	mower blade balancer
302	nursery container
303	oscillating sprinkler
304	peat moss
305	pick
306	planting/earth/soil auger
307	pole pruner
308	polyethylene pipe
309	pop-up irrigation head
310	post-hole digger
311	power blower
312	power hedge trimmer
313	pot-in-pot units
314	pump sprayer tank not pressurized
315	propagation mat
316	pruning saw
317	reel mower
318	resin-coated fertilizer
319	rotary mower
320	rototiller
321	round point shovel
322	scoop shovel
323	shade fabric
324	sharpening stone
325	siphon proportioner
326	soaker hose

327 soil sampling tube

No.	Item Name
328	solenoid valve
329	spade
330	sphagnum moss
331	square point (flat) shovel
332	string trimmer
333	thatch rake
334	tree caliper
335	tree wrap
336	trowel
337	vertical mower
338	water breaker
339	wire tree basket

Updated Summer 2021

Updated Summer 2021

## Nursery/Landscape CDE Identification and Equipment Scorecards

150 points

Participant Name\_\_\_\_\_

Number\_\_\_\_\_ Chapter\_\_\_\_\_

Directions: Identify plant specimens, insect pests, diseases, weed pests, equipment and supplies by writing the correct sample number from list provided to the sample spaces below.

1.	26.	
2.	20.	
3.	28.	
4.	29.	
5.	30.	
6.	31.	
7.	32.	
8.	33.	
9.	34.	
10.	35.	
11.	36.	
12.	37.	
13.	38.	
14.	39.	
15.	40.	
16.	41.	
17.	42.	
18.	43.	
19.	44.	
20.	45.	
21.	46.	
22.	47.	
23.	48.	
24.	49.	
25.	50.	

SCORING DIRECTIONS: Each plant, insect pest, disease, weeds pests, equipment and supplies identification is worth 3 points. Deduct total incorrect from 150 points possible and record score at the bottom of the card.





# **Potting Nursery Stock Practicum Scorecard**

#### (50 POINTS)

Name	Member Number	Chapter	Team Number
Judge Name	Judge's Signature		Date

	Excellent	Good	Needs Improvement	Member Score
Potting Process				
Selection of plugs or liners	5-4 points Plugs/liners are uniform in size and shape, correct number selected based on pot size provided	<b>3-2 points</b> Plugs/liners are somewhat uniform in size and shape, just slightly off in selecting the correct number	<b>1-0 points</b> Plugs/liners are not uniform in size and shape, correct number not selected based on pot size provided	
Proper planting depth	<b>10-7 points</b> Hole is made prior to placing plant in soil, the entire root system is covered, leaving proper stem length visible	6-4 points minor amount of roots are showing, planted slightly too deep	<b>3-0 points</b> A large amount of roots are showing or plant stem is covered with soil	
Labeling of plant/pot	<b>5-4 points</b> Labeled with date planted, plant name, and cultivar	<b>3-2 points</b> Labeled with some but not all information required	<b>1-0 points</b> no label present or labeled with incorrect information	
Correct growing medium level in pot	<b>10-7 points</b> Growing media is filled to the inner lip of the pot, leaving enough room to water the plant	<b>6–4 points</b> Growing media is filled slightly too high or too low	<b>3-0 points</b> Growing media is left very low or completely fills up the pot	
Plug or liner arrangement and angle	5-4 points Plugs/Liners evenly spaced for pot size given and plugs/liners planted in upright position	<b>3-2 points</b> plugs/liners planted slightly too close or too far apart, planting slightly tilting	<b>1-0 points</b> Plugs/liners not spaced corrected and not planted upright	
Firmness of growing medium	<b>5-4 points</b> After planting, growing media is tapped/ pressed firmly around each plant leaving the plant upright	<b>3-2 points</b> Growing media is left slightly loose or left slightly too firm restricting plant growth	<b>1-0 points</b> Growing media is not firmed after planting or left entirely too firm restricting plant growth	
General appearance (free from handling damage)	<b>10-7 points</b> Final product presented to the judge with plants upright, pot clean, and in sellable condition	<b>6-4 points</b> Final product presented to the judge in slightly sellable condition	<b>3-0 points</b> Final product presented to judge in non-sellable condition	
		(50 POINTS	TOTAL POSSIBLE)	

# Nursery/Landscape Measuring Nursery Stock Scorecard

50 points

Participant Name		Number	Chapter
		Possible points	<u>Participant</u>
Α.	Correct Minimum Interval	(10)	
В.	Correct Minimum Interval	(10)	
C.	Correct Minimum Interval	(10)	
D.	Correct Minimum Interval	(10)	
E.	Correct Minimum Interval	(10)	
	TOTAL POINTS	(50)	

**Team Number** 

## Nursery/Landscape Propagating Nursery Stock Practicum Scorecard

Chapter/State

Member Number

(50 POINTS) Name

Judge Name	Judge's Signatu	Date			
	Excellent	Good	Needs Improvement	Member Score	
Selection of cuttings	<b>10-7 points</b> Small uniform terminal shoot cuttings	<b>6-4 points</b> Used some cuttings of the same size and type	<b>3-0 point</b> too large, nonterminal shoots, or not uniform in size		
Making cuttings	<b>10-7 points</b> Straight, flush even cut of the basal end	6-4 points Some cuttings cut properly and some incorrectly cut	<b>3-0 points</b> basal end cut at angle or damaged		
Preparation of cuttings for sticking in growing media	5-4 points Selected/ prepared cuttings that did not require further preparation	3-2 points Selected cuttings that required removal of damaged and/or unneeded foliage	<b>1-0 points</b> left damaged and/or unnecessary foliage on plant		
Use of rooting hormone	5-4 points Poured correct amount of rooting hormone into separate container, applied hormone & tapped off excess amount	<b>3-2 points</b> Too much or too little put in separate container, applied correctly but did not tap off extra hormone	<b>1-0 point</b> applied directly from source container and/or did not use rooting hormone		
Selection of growing media	5-4 points Select best rooting medium for optimum rooting	<b>3-2 points</b> Select moderate but not best choice for optimum rooting	<b>1-0 points</b> selected incorrect rooting medium		
Sticking of cuttings in growing media	<b>10-7 points</b> Creating a dibble in media prior to placing cutting, placing at proper depth, firming media correctly	6-4 points Correctly demonstrated at least 1 or 2 of the correct principles	<b>3-0 points</b> no prior hole made, planted too deep, or left unstable		
Cuttings labeled correctly	<b>5-4 points</b> Labeled with date propagated, plant name, and cultivar	<b>3-2 points</b> Labeled with some but not all information required	<b>1-0 point</b> no label present or labeled with incorrect information		
		TOT. (50 POINTS I			

## Nursery/Landscape Pruning Nursery Stock Practicum Scorecard

50 points

NAME				Member Number
Chapter		STATE		Team Number

Directions: Select the five (5) pruning cuts you feel would most improve the plant's health, form and overall quality. Mark your selections with a "X" next to the number.

- 1. \_\_\_\_\_
- 2.
- 3.
- 4.
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_