

# National FFA Floriculture Career Development Event

A Special Project of the National FFA Foundation

## Important Note

*Please thoroughly read the Introduction Section at the beginning of this handbook for complete rules and procedures that are relevant to all National FFA Career Development Events.*

## I. Purpose

The National FFA Floriculture Career Development Event is designed to promote the study of and interest in production and retailing of flowers, plants and foliage through the agricultural education curriculum.

## II. Objectives

- A. Identify floriculture and bedding plant materials.
- B. Identify and understand treatment of unhealthy plants due to pest, nutritional, mechanical or chemical injury.
- C. Understand the biological and scientific principles and develop the skills underlying propagation, growth requirements, growing techniques, harvesting, marketing and maintenance of established floriculture plants.
- D. Understand principles and develop skills of floral design.
- E. Identify and select appropriate supplies and equipment for the flower shop and greenhouse.
- F. Understand and demonstrate the use of safety procedures and practices in floriculture operations.
- G. Operate and maintain appropriate equipment for floriculture operations.
- H. Understand and demonstrate interpersonal skills necessary for successful employment in the floriculture industry.
- I. Understand and demonstrate proper sales and customer service skills.
- J. Understand general business practices appropriate to the floriculture industry.

## III. Agriculture, Food and Natural Resources (AFNR) Career Cluster Content Standards

With the recommendation of the National FFA Board of Directors, all national FFA programs have incorporated these standards to guide the direction and content of program materials and activities. Refer to Appendix A in this chapter of the handbook for a complete list of the measurable activities that participants will carry out in this event. For details about the incorporation of AFNR standards, refer to the Introduction chapter of the CDE handbook.

## IV. Event Rules

- A. Each team will be comprised of four members. All four scores will be used to determine total team score.
- B. It is highly recommended that participants wear FFA Official Dress for this event.
- C. Under no circumstances will any participant be allowed to touch or handle plant material during the event except when instructed by the event staff.
- D. Any communication between participants during the event will be sufficient cause to eliminate the team from the event. The exception to this is the team activity.
- E. Any participant caught cheating during the event will be expelled from the event.

- F. All participants are expected to be prompt at their stations throughout the event. No provision will be made for tardiness, which will in most cases cause the late participant to lose event points.
- G. The event superintendent will assign the participants to group leaders who will escort them to various event staging sites. Participants must know their participant number and stay in their assigned group at all times or until told to change leaders by the event superintendent.
- H. Any assistance given to a participant from any source during the event, other than a floriculture official, will be sufficient cause to eliminate the team from the event.
- I. All participants will be given an identification number by which they will be designated throughout the event.
- J. Various computer applications may be utilized throughout the floriculture event.
- K. Any participant in possession of an electronic device in the event area is subject to disqualification.

## V. Event Format

### A. Materials students need to provide:

- 1. Clean clipboard, free of notes
- 2. Two sharpened No. 2 pencils
- 3. Prepared résumé
- 4. Floral shears
- 5. Knife
- 6. Calculator- Should be battery operated, non-programmable and non-scientific. No other calculators are allowed to be used during the event.
- 7. Participants may also bring an apron and/or a tool belt and towels; these items will not be provided.

### B. Team Activity- 1,000 points

- 1. Each team will perform an assignment routinely performed in some phase of the floriculture industry that requires teamwork. Prior to the event, the National FFA Floriculture Career Development Event committee will select a theme and series of floriculture industry assignments. These tasks will be described in situational terms for presentation to each team. Forty-five minutes will be allowed for completing the activity. There will be an additional fifteen minutes for preparation and clean up. All materials needed to complete the assignment will be provided.
- 2. The type of assignments that may be used in this phase of the event are:
  - a. Designing floral decorations for an event or party.
  - b. Packing plants for shipping and updating inventory.
  - c. Filling orders for customers.
- 3. Scoring criteria for the team preparation and presentation are on the *team activity score-card* which will be recorded by a judge.

### C. Individual Activities

#### 1. Identification of plant materials and equipment- 200 points

Forty specimens from the floriculture plant and equipment identification list will be displayed for participants to identify by technical and common names. A number will designate each specimen. Five points will be awarded for each specimen that is correctly identified. Each participant will be allowed 20 minutes to complete this phase of the event.

**2. General Knowledge Examination- 250 points**

Participants will answer 50 multiple choice questions that cover the areas of the floriculture industry reflected in the event objectives. This phase of the event will test participants' knowledge and understanding of basic biological and scientific principles of producing and marketing flowers, plants and foliage. Each participant will be allowed 50 minutes to complete the exam. Each answer has a value of five points.

**3. Problem-Solving/Decision-Making- 200 points**

Each participant will solve ten problems related to the various aspects of the floriculture industry identified in the event objectives. Each problem will describe the situation or create the problem and list four possible solutions to the problem. The participant must decide on the BEST possible solution to the problem. All materials and information necessary to solve the problem will be available to the participant as he/she solves the problem. Each participant will be allowed 50 minutes to complete this phase of the event. Each correct solution has a value of 20 points.

**4. Annual Practicums- 300 points**

Each participant will complete three annual practicums: floral arrangement, job interview and a selling practicum.

**a. Floral Arrangement- 100 points**

Make a \$35 floral arrangement. The event superintendent will announce the type of arrangement during the team orientation meeting. Using the materials provided, participants will be allowed 20 minutes to complete their arrangements and itemized bills. The event assistant at the beginning of the practicum will provide participants the RETAIL price of the flowers and foliage that they will use in their arrangements. The MARKUP will be built into the retail price. When the participant has determined the total arrangement cost, he or she has included the markup. Retail cost of flowers and foliage given to the participant will be determined after polling florists to determine their current retail prices on the flowers and foliage used in the event.

Scoring criteria are presented on the *floral arrangement practicum scorecard* which will be recorded by a judge.

**Explanation of Floral Arrangement Terms:**

- i. **Design:** Design is the overall shape or form of composition; a planned relationship of the parts. The elements of design include: line (linear patterns attracting the eye to the focal point); form (three dimensional shape); texture (surface appearance of materials); color (use of tints, tones, shades of hues, as well as black, gray and white); the pleasing way in which lines, textures, sizes and colors are blended or contrasted and the tying together of the parts by the combination of good design, balance and harmony.
- ii. **Balance:** Visual stability, regardless of whether design is symmetrical or asymmetrical determined by the relative sizes of material and relative darkness of lightness and the placement of them.
- iii. **Functionality:** Appropriateness of arrangement for intended use, soundness of construction.
- iv. **Judges' Choice:** The use of plant materials and design principles in a particularly creative, original and unique manner.

**b. Job Interview- 100 points**

Each participant will appear before an employer (judge) for the purpose of interviewing for a position available in the employer's business. The event superintendent will announce specific information about the job for which the participant is applying at the team orientation meeting. Participants will be given two job descriptions at the team orientation meeting along with application forms to complete. Participants will be allowed to choose the job they wish to interview for and prepare their applications prior to participating in the practicum. Participants will be expected to prepare, prior to the event, a résumé of their experiences and background to present to the judge at the time of the interview. Ten minutes will be allowed for this practicum. Participants will be allowed five minutes to complete the interview and five minutes for judges to score the interview.

Scoring criteria are presented on the *job interview practicum scorecard* which will be recorded by a judge.

**c. Selling Practicum- 100 points (one will be chosen)****i. Telephone Sales**

Each participant will be provided a telephone and appropriate materials. An event judge will serve as a customer and will score telephone usage and the written order. Ten minutes will be allowed for completion of this practicum including the judging of the telephone dialogue and sales form. Of the ten minutes, participants will be allowed five minutes for dialogue with the customer and completion of the sales form. Judges will be allowed five minutes to score the participant. Scoring criteria are presented on the *telephone sales practicum scorecard* which will be recorded by a judge.

**ii. Selling One-On-One**

Each participant will assume the role of a sales person in a floriculture business (grower, florist shop, garden center, etc.) A customer (judge) with a specific need will approach the participant. The participant will help the customer meet his/her need by using sales skills. All supplies, information and the business setting in which the participant works will be provided. Ten minutes will be allowed for this practicum. Of the ten minutes, participants will be allowed five minutes for dialogue with the customer and completion of the sales form. Judges will be allowed five minutes to score the participant. Scoring criteria are presented on the *selling one-on-one practicum*

scorecard which will be recorded by a judge.

## 5. Rotational Practicums

In addition to the three annual practicums, three practicums will be selected from the list below for each noted year.

### *2012, 2014, 2016*

Handling a Hazardous Situation

Make a Dish Garden

Make a Product Display

Growing Procedures

Media Selling

### *2013, 2015*

Growing Procedures

Handling a Customer Complaint

Identifying and Controlling Plant Disorders

Make and Package a Corsage

Media Selling

#### a. Growing Procedures- 75 points (one of the three will be chosen)

##### i. Potting of Plant Cuttings

Participants will be asked to plant five rooted cuttings in the pot provided. Each participant will be given a group of cuttings from which to select five; a 5 1/2-to-6-inch pot; a soil medium at the correct moisture level, ID stake and a marking pencil. Ten minutes will be allowed for completion of this practicum including the judging of the potted plant cuttings.

Scoring criteria are presented on the *plant potting practicum scorecard* which will be recorded by a judge.

##### ii. Asexual Propagation of Plants

Each participant will be provided the parent plant materials and all other materials needed to propagate plants asexually. Using the available materials, participants will take five cuttings from the plant before them and stick them in rooting media. Ten minutes will be allowed for completion of this practicum including the judging of the participant's performance in completing the practicum.

Scoring criteria are presented on the *asexual plant propagation scorecard* which will be recorded by a judge.

##### iii. Pinching Plants

A plant will be placed before each participant. The participant will be given instructions as to what they are to do to the plant by the event assistant in charge of the practicum. Participants will be judged on the procedures they follow in pinching the plant. Ten minutes will be allowed for completion and judging of this practicum.

Scoring criteria are presented on the *pinching plant scorecard* which will be recorded by a judge.

**b. Make a Dish Garden- 75 points**

Each participant will make a \$35 dish garden. All plant materials, growing media and containers will be provided. Twenty minutes will be allowed for each participant to make their dish garden and complete the itemized listing of costs. At the beginning of the practicum, the participant will be provided with the RETAIL price of plants and other materials to be used in their dish garden. The MARKUP is built into the retail price.

Scoring criteria are presented on the *making a dish garden practicum scorecard* which will be recorded by a judge.

**c. Make a Product Display- 75 points**

Each participant will set up a sales display of items commonly sold by a retail florist. Display areas will be established for each participant along with the product(s) to be displayed and all materials to establish the display. Twenty minutes will be allowed for completion of this practicum.

Scoring criteria are presented on the *making a product display practicum scorecard* which will be recorded by a judge.

**d. Make and Package a Corsage- 75 points**

Each participant will make and package a \$15 corsage. The type of corsage and information about the corsage will be announced by the event assistant in charge at the beginning of the practicum. All plant and non-plant materials needed to construct and package the corsage will be provided. Each participant will be allowed 20 minutes to complete the construction of the corsage and complete an itemized listing of costs for the corsage constructed.

Scoring criteria are presented on the *making and packing a corsage scorecard* which will be recorded by a judge.

**e. Identifying and Controlling Plant Disorders- 75 points**

Each participant will be given a plant with a nutritional, environmental, disease or insect disorder. After viewing the plant, the participant will identify the disorder and prescribe treatment. Containers marked with specific chemicals or chemical products (will contain water colored to resemble the products) may be available. In addition to the above points, participants will be judged on their knowledge of safety procedures while completing this practicum. Ten minutes will be allowed for this practicum.

Scoring criteria are presented on the *control of plant disorders scorecard* for plants with insect or disease disorders or the *identifying and prescribing treatment for plant disorders scorecard* for plants with nutritional or environmental disorders which will be recorded by a judge.

The plant disorder to be used in the event may be, but is not limited to, selections from the following list of disorders.

**i. Nutritional and Environmental Disorders**

- Poor soil drainage
- Overwatering damage
- Insufficient water damage
- Inadequate lighting
- Too much light
- Improper temperature
- Iron deficiency
- Nitrogen deficiency
- Phosphorus deficiency
- Salt damage

**ii. Diseases**

- Powdery mildew
- Leaf spot
- Root rot
- Stem rot
- Verticillium wilt
- Fusarium wilt
- Rust
- Damping-off
- Mosaic
- Rhizoctonia
- Anthracnose
- Bacterial wilt

**iii. Insects and Pests**

- Snails
- Slugs
- Whiteflies
- Aphids
- Leaf miner
- Spider mites
- Mealybugs
- Leafhopper
- Spittlebug
- Scale

**f. Handling a Hazardous Situation- 75 points**

Each participant will be presented with a hazardous situation that could develop in a floriculture business. The participant will be asked to explain how to resolve the problem. The participant will be evaluated on their understanding of the problem and procedures and practices followed in resolving the problem. Ten minutes will be allowed for this practicum.

Scoring criteria are presented on the *hazardous situation scorecard* which will be recorded by a judge.

**g. Handling a Customer Complaint- 75 points**

Each participant will assume the role of an employee in a floriculture business (grower, flower shop, garden center, etc.). A customer or potential customer who has a complaint will approach the participant. The participant will work with the customer to resolve their complaint. Ten minutes will be allowed for this practicum.

Scoring criteria are presented on the *customer complaint scorecard* which will be recorded by a judge.

**h. Media Selling- 75 points**

Each participant will be asked to create or evaluate advertising from the following (not an inclusive list):

- i. Newspaper
- ii. TV
- iii. Billboard
- iv. Newsletter
- v. Brochure
- vi. Social Media

All information and materials needed to develop the advertisement will be provided. Twenty minutes will be allowed for this practicum. Of the 20 minutes, 12 minutes will be allotted for preparation, five minutes for presentation and three for judges to score.

Scoring criteria are presented on the *media selling practicum (written) scorecard* or *media selling practicum (electronic) scorecard* which will be recorded by a judge.

## VI. Scoring

Phase	Individual Points	Team Points
Identification of Plant Material	200	800
General Knowledge	250	1,000
Problem Solving	200	800
Annual Practicums	300	1,200
Rotational Practicums	225	900
Team Activity	0	1,000
<b>Total</b>	<b>1,175</b>	<b>5,700</b>

## VII. Tiebreakers

If ties occur the following events will be used in order to determine award recipients:

1. Floral arrangement practicum
2. Sales practicum
3. Job Interview

## VIII. Awards

Awards will be presented to individuals and/or teams based upon their rankings at an awards ceremony. Awards are sponsored by a cooperating industry sponsor(s) as a special project, and/or by the general fund of the National FFA Foundation.

## IX. References

This list of references is not intended to be all-inclusive. Other sources may be utilized, and teachers are encouraged to make use of the very best instructional materials available. The following list contains references that may prove helpful during event preparation.

National FFA Core Catalog—Past CDE Q&A's (<http://shop.ffa.org/cde-qas-c1413.aspx>)

*American Style Flower Arranging*. Peter B. Pfahl and Elwood W. Kalin, Prentice-Hall, Inc., Englewood Cliffs, New Jersey. 1982

*Floral Design & Interior Landscape Management*. Dianne A. Noland, Prentice Hall Interstate

*Floriculture – From Greenhouse Production to Floral Design*. Ronald J. Biondo and Dianne A. Noland, Interstate Publishers.

*Introduction to Floriculture*, 1980. Roy A. Larson. Academic Press, New York, NY.

*Introduction to Horticulture Science and Technology*. Felton, Ruter, Kelley and Krewer, Inter-

state Publishers, Inc.

*The Pesticide Book*. 6<sup>th</sup> Edition, by: George W. Ware and David M. Whitacre, MeisterPro Information Resources.

*The Retail Florist Business*, 4th Ed., 1983. Peter B. Pfahl, Interstate Publishers and Printers, Danville, IL.

**Ball Publishing:**

*Grower Talks on Pest Control*

*Grower Talks on Perennials*

*Grower Talks on Plugs*

*Ball Redbook*, Volume 1&2, 17<sup>th</sup> Edition

## Floriculture Plant Identification List

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

<i>Number Botanical Name/Common Name</i>	<i>Number Botanical Name/Common Name</i>
101 Aechmea chantinii cv. / Bromeliad	102 Ageratum mexicanum cv. / Ageratum
103 Aglaonema commutatum cv. / Aglaonema	104 Alstroemeria aurantiaca / Peruvian Lily
105 Antirrhinum majus cv. / Snapdragon	106 Anthurium x andraeanum cv. / Anthurium, Flamingo Lily
107 Aphelandra squarrosa cv. / Aphelandra, Zebra Plant	108 Araucaria heterophylla / Norfolk Island Pine
109 Argyranthemum frutescens / Marguerite Daisy	110 Asparagus densiflorus 'Sprengeri' / Sprengeri "Fern"
111 Asparagus setaceus / Asparagus "Fern"	112 Astilbe hybrid cv. / Astilbe
113 Begonia x tuberhybrida cv. / Tuberous Begonia	114 Begonia x semperflorens- cultorum / Wax Begonia
115 Caladium x hortulanum cv. / Fancy-Leaved Caladium	116 Calceolaria crenatiflora cv. / Pocketbook Plant
117 Callistephus chinensis cv. / China Aster	118 Camellia japonica cv. / Common Camellia
119 Canna x generalis cv. / Common Garden Cannana	120 Catharanthus roseus / Madagascar Periwinkle
121 Cattleya cv. / Cattleya Orchid Hybrid	122 Celosia argentea cv. / Cockscomb
123 Chamaedorea elegans / Parlor Palm	124 Chamelaucium uncinatum / Waxflower
125 Cholorophytum comosum cv. / Spider Plant	126 Chrysanthemum x morifolium cv. / Florist's Chrysanthemum
127 Cissus rhombifolia 'Mandaiana' / Grape Ivy	128 Clematis Jackmanii Group cv. / Clematis
129 Codiaeum variegatum pictum cv. / Croton	130 Crassula argentea / Jade Plant
131 Cyclamen x persicum cv. / Florist's Cyclamen	132 Cymbidium cv. / Cymbidium Orchid
133 Dianthus caryophyllus cv. / Carnation	134 Dieffenbachia maculata cv. / Spotted Dumbcane
135 Dracaena fragrans 'Massangeana' / Corn Plant Dracaena	136 Dracaena cincta / Red Edge Dracaena
137 Echeveria cv. / Hens and Chickens	138 Echinocactus cv. / Barrel Cactus
139 Epipremnum aureum cv. / Golden Pothos, Devil's Ivy	140 Erica carnea cv. / Spring Heath
141 Eucalyptus polyanthemos / Silver Dollar Gum	142 Euphorbia milii splendens / Crown-of-Thorns
143 Euphorbia pulcherrima cv. / Poinsettia	144 Exacum affine / German (Persian) Violet
145 Ficus benjamina 'Exotica' / Benjamin Fig	146 Ficus elastica 'Decora' / 'Decora' Rubber Plant
147 Ficus pumila / Creeping Rubber Plant	148 Freesia x hybrida / Freesia
149 Fittonia verschaffeltii / Nerve Plant	150 Gardenia jasminoides 'Fortuniana' / Gardenia
151 Gerbera jamesonii / Transvaal Daisy	152 Gladiolus x hortulanus cv. / Garden Gladiolus
153 Gynura aurantiaca 'Sarmentosa' / "Purple Passion", Velvet Plant	154 Gypsophila elegans cv. / Baby's Breath
155 Hedera helix cv. / English Ivy	156 Hemerocallis cv. / Daylily

157	Heptapleurum arboricola / Dwarf Schefflera, Dwarf Octopus Tree	158	Hippeastrum hybrid cv. / Amaryllis
159	Hosta undulata / Plantain Lily	160	Hoya carnosa / Wax Plant
161	Hyacinthus orientalis cv. / Hyacinth	162	Hydrangea macrophylla cv. / French (Florist's) Hydrangea
163	Impatiens hybrid cv. / Impatiens	164	Iris x germanica florentina cv. / Flag (Bearded) Iris
165	Iris x xiphium cv. / Dutch Iris	166	Justicia brandegeana / Shrimp Plant
167	Kalanchoe x blossfeldiana cv. / Kalanchoe	168	Leucanthemum x superbum cv. / Shasta Daisy
169	Liatris spicata / Liatris	170	Lilium longiflorum cv. / Trumpet (Easter) Lily
171	Lilium x hybridum cv. / Hybrid (Garden) Lily	172	Limonium sinuatum / Statice
173	Lobularia maritima / Sweet Alyssum	174	Maranta leuconeura var. kerchoviana / Prayer Plant
175	Matthiola incana cv. / Flowering Stock	176	Monstera deliciosa / Cutleaf "Philodendron"
177	Narcissus pseudonarcissus cv. / Daffodil	178	Neoregelia carolinae 'Tricolor' / Bromeliad
179	Nephrolepis exaltata cv. / Boston Fern	180	Opuntia tribe cv. / Cactus
181	Paeonia cv. / Peony	182	Paphiopedilum x hybrid cv. / Lady'slipper Orchid
183	Pelargonium x domesticum cv. / Regal (Lady Washington) Geranium	184	Pelargonium x hortorum cv. / (Zonal) Geranium
185	Pelargonium peltatum cv. / Ivy Geranium	186	Peperomia argyrea / Watermelon Peperomia
187	Peperomia caperata / Emerald Ripple Peperomia	188	Peperomia obtusifolia 'Variegata' / Variegated Peperomia
189	Petunia x hybrida cv. / Common Garden Petunia	190	Phalaenopsis cv. / Phalaenopsis (Butterfly) Orchid
191	Philodendron scandens oxycardium / Heartleaf Philodendron	192	Pilea cadierei / Aluminum Plant
193	Pilea involucrata / Friendship Plant	194	Pilea microphylla / Artillery Plant
195	Pilea nummularifolia / Creeping Charley	196	Plectranthus mummularis / Swedish Ivy
197	Polianthes tuberosa / Tuberose	198	Primula x polyanthus cv. / Polyanthus (Primrose)
199	Primula malacoides cv. / Fairy Primrose	200	Rhododendron cv. / Azalea
201	Rosa hybrid, Class Hybrid Tea cv. / Hybrid Tea Rose	202	Rumohra adiantiformis / Leatherleaf Fern
203	Saintpaulia ionantha cv. / African Violet	204	Salvia splendens cv. / Salvia
205	Sansevieria trifasciata cv. / Snake Plant	206	Saxifraga stolonifera / Strawberry Plant
207	Schlumbergera bridgesii / Christmas Cactus	208	Schlumbergera truncata cv. / Thanksgiving Cactus, Crab Cactus
209	Senecio cineraria 'Diamond' / Diamond Dusty Miller	210	Senecio x hybridus cv. / Florist's Cineraria
211	Sinningia speciosa Fyfiana Group cv. / Gloxinia	212	Solanum pseudocapsicum cv. / Jerusalem Cherry

213	Solenostemon scutellarioides / Coleus	214	Spathiphyllum clevelandii / White Anthurium, Peace Lily
215	Stephanotis floribunda / Stephanotis	216	Strelitzia reginae / Bird-of-Paradise
217	Syngonium podophyllum / Nephthytis	218	Tagetes species cv. / Marigold
219	Tolmiea menziesii / Pickaback Plant	220	Tulipa cv. / Tulip
221	Vaccinium ovatum / Florist's "Huckleberry"	222	Viola x wittrockiana cv. / (Garden) Pansy
223	Zebrina pendula cv. / Wandering Jew	224	Zinnia elegans / Zinnia

### Floriculture Equipment Identification List

225	Boutonniere Pin	226	Corsage Pin
227	Corsage Stem	228	Corsage Tape
229	Glue Gun	230	Glue Pan
231	Knife sharpener	232	Paddle Wire
233	Pruner	234	Ribbon Scissor
235	Rose Stripper	236	Steel Pick Machine
237	Styrofoam Cutter	238	Under Water cutter
239	Waterproof Tape	240	Wire cutters
241	Wristlet		

## Floriculture Floral Arrangement Practicum Scorecard

Name: \_\_\_\_\_

Team No.: \_\_\_\_\_

State: \_\_\_\_\_

Member No.: \_\_\_\_\_

	Possible Score	Needs Improvement	Good	Excellent	Member Score
<b>Arrangement</b>	<b>65</b>				
• Design		0-11	12-24	25-35	
• Balance		0-5	6-10	11-15	
• Functionality		0-2	3-4	5	
• Judges Choice		0-3	4-6	7-10	
<b>Itemized List of Costs</b>	<b>35</b>				
• Price Range		0-3	4-8	9-11	
• Accuracy		0-3	4-6	7-10	
• Completeness		0-2	3-5	6-7	
• Neatness		0-2	3-5	6-7	
<b>Total Possible:</b>	<b>100</b>				

### Explanation of Floral Arrangement Terms

**Design:** Design is the overall shape or form of the composition; a planned relationship of the parts. The elements of design include: line (linear patterns attracting the eye to the focal point); form (three dimensional shape); texture (surface appearance of materials); color (use of tints, tones, shades of hues, as well as black, gray and white); the pleasing way in which lines, textures, sizes and colors are blended or contrasted and the tying together of the parts by the combination of good design, balance and harmony.

**Balance** Visual stability, regardless of whether design is symmetrical or asymmetrical determined by the relative sizes of materials and relative darkness of lightness and the placement of them.

**Functionality** Appropriateness of arrangement for intended use and soundness of construction.

**Judge's Choice** The use of plant materials and design principles in a particularly creative, original and unique manner.

\_\_\_\_\_  
Judge's Name\_\_\_\_\_  
Judge's Signature\_\_\_\_\_  
Date

## Floriculture

**Floral Arrangement Itemized List of Costs**

**Name:** \_\_\_\_\_  
**State:** \_\_\_\_\_

**Team No.:** \_\_\_\_\_  
**Member No.:** \_\_\_\_\_

Flower/ Foliage	Quantity Used	Unit Cost	Total

Total Flower/Foliage Material Cost \_\_\_\_\_

Other	Quantity Used	Unit Cost	Total

Total Other Materials Cost \_\_\_\_\_

Total Flower/Foliage Material Cost	
Total Other Material Cost	
Floral foam	
Container Cost	
<b>Total Arrangement Cost*</b>	

**Floriculture**

\* Participants will be provided the RETAIL price of flowers and foliage that they will use in their arrangement by the event official at the beginning of the practicum. The MARKUP is built into the retail price of the flowers and the foliage used in the arrangement.

### Job Interview Practicum Scorecard

Name: \_\_\_\_\_  
 State: \_\_\_\_\_

Team No.: \_\_\_\_\_  
 Member No.: \_\_\_\_\_

	Needs Improvement	Good	Excellent	Member Score
Introduction <ul style="list-style-type: none"> <li>Initial presentation</li> <li>Eye contact</li> <li>Handshake</li> <li>Gives name</li> <li>States why here</li> </ul>	0-3	4-8	9-11	
Knowledge of job <ul style="list-style-type: none"> <li><i>Resume</i> <ul style="list-style-type: none"> <li>Typed</li> <li>Completeness</li> <li>Content/Accurate</li> </ul> </li> <li><i>Application</i> <ul style="list-style-type: none"> <li>Legibility</li> <li>Completed</li> </ul> </li> </ul>	0-8	9-16	17-25	
Knowledge of the floriculture industry/job <ul style="list-style-type: none"> <li>Tell me about yourself</li> <li>What skills do you have for this job?</li> <li>What are your experiences relating to this job?</li> <li>Why should I hire you over someone else?</li> </ul>	0-6	7-12	13-20	
Response to questions <ul style="list-style-type: none"> <li>What are your weaknesses?</li> <li>Where do you see yourself in the next 5 years?</li> <li>BONUS: Would you hire this person?</li> </ul>	0-4	5-8	9-14	
Personality <ul style="list-style-type: none"> <li>Confidence</li> <li>Enthusiasm</li> <li>Appearance</li> </ul>	0-5	6-10	11-15	
Poise <ul style="list-style-type: none"> <li>Posture</li> <li>Closure ("Thank you.")</li> <li>Asks for the job or a decision date</li> </ul>	0-5	6-10	11-15	
<b>Total Score: 100</b>				

\_\_\_\_\_  
 Judge's Name

\_\_\_\_\_  
 Judge's Signature

\_\_\_\_\_  
 Date

### Floriculture Telephone Sales Practicum Scorecard

Name: \_\_\_\_\_

Team No.: \_\_\_\_\_

State: \_\_\_\_\_

Member No.: \_\_\_\_\_

	Possible Score	Needs Improvement	Good	Excellent	Member Score
<b>Telephone Usage</b>	<b>70</b>				
• Introduction		0-2	3-4	5	
• Voice		0-2	3-5	6-7	
• Personality		0-4	5-8	9-12	
• Information Gathered		0-6	7-12	13-18	
• Evidence of Product Knowledge		0-4	5-8	9-14	
• Closing of Order		0-4	5-8	9-14	
<b>Written Order</b>	<b>30</b>				
• Delivery Instructions		0-2	3-4	5	
• Description of Floral Items		0-2	3-4	5	
• Billing Information		0-2	3-4	5	
• Card Message		0-2	3-4	5	
• Neatness and Completeness		0-2	3-4	5	
• Correct Computation		0-2	3-4	5	
<b>Total Score:</b>	<b>100</b>				

\_\_\_\_\_  
Judge's Name\_\_\_\_\_  
Judge's Signature\_\_\_\_\_  
Date

**Floriculture  
Selling One-on-One Practicum Scorecard**

**Name:** \_\_\_\_\_

**Team No.:** \_\_\_\_\_

**State:** \_\_\_\_\_

**Member No.:** \_\_\_\_\_

	Needs Improvement	Good	Excellent	Member Score
Took initiative	0-5	6-10	11-16	
Communicated effectively	0-5	6-10	11-16	
Exhibited ambition and efficiency	0-6	7-12	13-20	
Diplomatic and courteous	0-6	7-12	13-20	
Knew merchandise, prices and policies	0-4	5-8	9-14	
Closed sale properly	0-4	5-8	9-14	
<b>Total Score:</b>	<b>100</b>			

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Judge's Name

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Judge's Signature

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Date

### Floriculture Plant Potting Practicum Scorecard

Name: \_\_\_\_\_

Team No.: \_\_\_\_\_

State: \_\_\_\_\_

Member No.: \_\_\_\_\_

	Possible Score	Needs Improvement	Good	Excellent	Member Score
<b>Potting Process</b>	<b>52</b>				
• Selection cuttings		0-3	4-6	7-10	
• Filling pot with soil		0-1	2-3	4	
• Placing of cuttings		0-2	3-4	5-6	
• Covering cutting rooted ends		0-6	7-12	13-18	
• Labeling of pot		0-3	4-6	7-9	
• Watering of potted cuttings		0-2	3-4	5	
<b>Potting Product</b>	<b>23</b>				
• Depth of planting		0-2	3-4	5	
• Correct soil level in pot		0-2	3-4	5	
• Cutting arrangement & angle		0-2	3-4	5	
• Firmness of soil		0-1	2-3	4	
• General appearance (free from handling damage)		0-1	2-3	4	
<b>Total Possible:</b>	<b>75</b>				

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Judge's Name\_\_\_\_\_  
Judge's Signature\_\_\_\_\_  
Date

**Floriculture  
Making a Dish Garden Scorecard**

**Name:** \_\_\_\_\_

**Team No.:** \_\_\_\_\_

**State:** \_\_\_\_\_

**Member No.:** \_\_\_\_\_

	Needs Improvement	Good	Excellent	Member Score
Selection of products	0-2	3-5	6-8	
Preparation of plant materials	0-2	3-5	6-7	
Use of growing media	0-3	4-6	7-10	
Use of other materials	0-4	5-8	9-12	
Design	0-5	6-10	11-15	
Attractiveness	0-4	5-9	10-13	
Pricing	0-3	4-6	7-10	
<b>Total Score:</b>	<b>75</b>			

\_\_\_\_\_  
Judge's Name

\_\_\_\_\_  
Judge's Signature

\_\_\_\_\_  
Date

**Floriculture  
Dish Garden Itemized List of Costs**

**Name:** \_\_\_\_\_

**Team No.:** \_\_\_\_\_

**State:** \_\_\_\_\_

**Member No.:** \_\_\_\_\_

Plant Material	Quantity Used	Unit Cost	Total

Total Plant Material Cost \_\_\_\_\_

Other	Quantity Used	Unit Cost	Total

Total Other Materials Cost \_\_\_\_\_

Total Plant Material Cost	
Total Other Material Cost	
Container Cost	
<b>Total Dish Garden Cost</b>	

**Floriculture  
Making a Product Display Scorecard**

**Name:** \_\_\_\_\_

**Team No.:** \_\_\_\_\_

**State:** \_\_\_\_\_

**Member No.:** \_\_\_\_\_

	Needs Improvement	Good	Excellent	Member Score
Creates interest	0-3	4-6	7-9	
Attractiveness	0-3	4-6	7-10	
Central theme	0-2	3-5	6-8	
Sales appeal	0-5	6-10	11-15	
Design	0-5	6-10	11-16	
Color harmony	0-3	4-6	7-9	
Focal point	0-2	3-5	6-8	
<b>Total Score:</b>	<b>75</b>			

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Judge's Name

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Judge's Signature

\_\_\_\_\_  
Date

**Floriculture  
Making and Packing a Corsage Scorecard**

**Name:** \_\_\_\_\_

**Team No.:** \_\_\_\_\_

**State:** \_\_\_\_\_

**Member No.:** \_\_\_\_\_

	Possible Points	Members Score
Wiring and taping	15	
Use of ribbon	10	
Design	17	
Wear-ability	14	
Packaging	7	
Pricing	12	
<b>Total Points</b>	<b>75</b>	

\_\_\_\_\_  
Judge's Name

\_\_\_\_\_  
Judge's Signature

\_\_\_\_\_  
Date

**Floriculture  
Corsage Itemized List of Costs**

**Name:** \_\_\_\_\_

**Team No.:** \_\_\_\_\_

**State:** \_\_\_\_\_

**Member No.:** \_\_\_\_\_

Flower/Foliage	Quantity Used	Unit Cost	Total

Total Flower/Foliage Material Cost \_\_\_\_\_

Other	Quantity Used	Unit Cost	Total

Total Other Materials Cost \_\_\_\_\_

Total Flower/Foliage Material Cost	
Total Other Material Cost	
<b>Total Arrangement Cost*</b>	

**Floriculture  
Asexual Plant Propagation Scorecard**

**Name:** \_\_\_\_\_

**Team No.:** \_\_\_\_\_

**State:** \_\_\_\_\_

**Member No.:** \_\_\_\_\_

	Possible Points	Members Score
Selection of cutting	12	
Making cuttings	15	
Preparation of cuttings for sticking in growing media	10	
Use of rooting hormone	6	
Selection of growing media	12	
Sticking of cuttings in growing media	8	
Response to questions	12	
<b>Total Points</b>	<b>75</b>	

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Judge's Name

\_\_\_\_\_  
Judge's Signature

\_\_\_\_\_  
Date

**Floriculture  
Control of Plant Disorders Scorecard  
(For Plants with Insect or Disease Disorders)**

**Name:** \_\_\_\_\_ **Team No.:** \_\_\_\_\_

**State:** \_\_\_\_\_ **Member No.:** \_\_\_\_\_

	Needs Improvement	Good	Excellent	Member Score
Diagnosis of problem	0-4	5-8	9-14	
Prescription of treatment	0-4	5-8	9-14	
Preparation of treatment	0-5	6-10	11-16	
Application of treatment	0-5	6-10	11-16	
Followed recommended safety practices	0-5	6-10	11-15	
<b>Total Score:</b>	<b>75</b>			

\_\_\_\_\_  
Judge's Name

\_\_\_\_\_  
Judge's Signature

\_\_\_\_\_  
Date

**Floriculture  
Identifying and Prescribing Treatment for Plant Disorders Scorecard  
(For Plants with Nutritional or Environmental Disorders)**

Name: \_\_\_\_\_

Team No.: \_\_\_\_\_

State: \_\_\_\_\_

Member No.: \_\_\_\_\_

	Needs Improvement	Good	Excellent	Member Score
Diagnosis of problem	0-4	5-8	9-12	
Description of problem	0-5	6-10	11-15	
Discussion of problem	0-6	7-12	13-18	
Prescription of treatment	0-6	7-12	13-18	
Personality	0-4	5-8	9-12	
<b>Total Score:</b>	<b>75</b>			

\_\_\_\_\_  
Judge's Name

\_\_\_\_\_  
Judge's Signature

\_\_\_\_\_  
Date

### Floriculture Pinching Plants Scorecard

**Name:** \_\_\_\_\_

**Team No.:** \_\_\_\_\_

**State:** \_\_\_\_\_

**Member No.:** \_\_\_\_\_

	Needs Improvement	Good	Excellent	Member Score
Selection of plant part to pinch	0-5	6-10	11-16	
Use of proper procedures in making pinches	0-6	7-12	13-20	
Make of proper hard pinches	0-4	5-8	9-12	
Made proper soft pinches	0-4	5-8	9-12	
Overall effect of making pinches	0-5	6-10	11-15	
<b>Total Score:</b>	<b>75</b>			

\_\_\_\_\_  
Judge's Name

\_\_\_\_\_  
Judge's Signature

\_\_\_\_\_  
Date

### Floriculture Hazardous Situation Scorecard

Name: \_\_\_\_\_

Team No.: \_\_\_\_\_

State: \_\_\_\_\_

Member No.: \_\_\_\_\_

	Needs Improvement	Good	Excellent	Member Score
Utilize proper personal safety precautions	0-6	7-12	13-20	
Utilize proper safety procedures in clearing up the situation	0-8	9-16	17-25	
Proper disposal of problem materials	0-6	7-12	13-20	
Utilize proper follow-up procedures	0-3	4-6	7-10	
<b>Total Score:</b>	<b>75</b>			

\_\_\_\_\_  
Judge's Name

\_\_\_\_\_  
Judge's Signature

\_\_\_\_\_  
Date

### Floriculture Customer Complaint Scorecard

Name: \_\_\_\_\_

Team No.: \_\_\_\_\_

State: \_\_\_\_\_

Member No.: \_\_\_\_\_

	Needs Improvement	Good	Excellent	Member Score
Obtained clear understanding of complaint	0-3	4-6	7-10	
Restate complaint in less negative terms	0-2	3-5	6-8	
Changed complaint into question	0-2	3-5	6-8	
Explored alternative solutions	0-6	7-12	13-20	
Solved problem	0-5	6-10	11-15	
Exhibited a pleasing personality	0-4	5-8	9-14	
<b>Total Score:</b>	<b>75</b>			

\_\_\_\_\_  
Judge's Name

\_\_\_\_\_  
Judge's Signature

\_\_\_\_\_  
Date

**Floriculture  
Media Selling Practicum Scorecard  
(Written)**

**Name:** \_\_\_\_\_

**Team No.:** \_\_\_\_\_

**State:** \_\_\_\_\_

**Member No.:** \_\_\_\_\_

	Needs Improvement	Good	Excellent	Member Score
Identified target group	0-2	3-5	6-8	
Informed the reader	0-3	4-6	7-10	
Appeared in good taste	0-3	4-6	7-10	
Easy to read	0-3	4-6	7-10	
Presented one idea	0-5	6-10	11-15	
Included only the essentials	0-4	5-8	9-12	
Proper use of space	0-3	4-6	7-10	
<b>Total Score:</b>	<b>75</b>			

\_\_\_\_\_  
Judge's Name

\_\_\_\_\_  
Judge's Signature

\_\_\_\_\_  
Date

**Floriculture  
Media Selling Practicum Scorecard  
(Electronic)**

**Name:** \_\_\_\_\_

**Team No.:** \_\_\_\_\_

**State:** \_\_\_\_\_

**Member No.:** \_\_\_\_\_

	Possible Score	Needs Improvement	Good	Excellent	Member Score
<b>Ad Information</b>	<b>36</b>				
• Identified target group		0-2	3-5	6-8	
• Informed the listener		0-2	3-5	6-8	
• Presented one idea		0-2	3-5	6-7	
• Contained essential information		0-2	3-5	6-7	
• Appealed to the listener		0-2	3-4	5-6	
<b>Camera Performance</b>	<b>39</b>				
• Voice		0-3	4-6	7-10	
• Personality		0-4	5-8	9-12	
• Diplomatic and courteous		0-2	3-5	6-9	
• Enthusiastic about product		0-2	3-5	6-8	
<b>Total Possible:</b>	<b>75</b>				

\_\_\_\_\_  
Judge's Name

\_\_\_\_\_  
Judge's Signature

\_\_\_\_\_  
Date

### Floriculture Team Activity Scorecard

Name: \_\_\_\_\_ Team No.: \_\_\_\_\_

State: \_\_\_\_\_

	Points Possible	Points Earned
<b>Established team leadership role</b>	<b>15</b>	
• No leadership role(s) were established <i>(0 points)</i>		
• One member seemed to assume leadership <i>(10 points)</i>		
• One member seemed to assume leadership and others cooperated <i>(15 points)</i>		
<b>Member participation in planning activity</b>	<b>35</b>	
• No member discussion occurred before work began <i>(0 points)</i>		
• Limited member discussion occurred before work began <i>(24 points)</i>		
• All members participated in discussion before work began <i>(35 points)</i>		
<b>Developed a workable plan</b>	<b>40</b>	
• Duties were not assigned and participation varied <i>(0 points)</i>		
• Duties were assigned and all had near equal parts <i>(26 points)</i>		
• Duties were assigned and all had equal parts <i>(40 points)</i>		
<b>Membership responsibilities were outlined and assigned</b>	<b>15</b>	
• Responsibilities were not verbally assigned <i>(0 points)</i>		
• Responsibilities were assigned with little interaction <i>(10 points)</i>		
• Responsibilities were assigned with interaction between members <i>(15 points)</i>		
<b>Material was organized prior to commencing activity</b>	<b>15</b>	
• Material was left as presented until needed <i>(0 points)</i>		
• Most material was organized <i>(10 points)</i>		
• Material was organized and distributed <i>(15 points)</i>		
<b>Member participation in carrying out activity functions</b>	<b>30</b>	
• One or more members had almost no participation <i>(0 points)</i>		
• All members participated <i>(20 points)</i>		
• All members participated with leadership provided <i>(30 points)</i>		
<b>Followed proper procedures in carrying out activity</b>	<b>30</b>	
• Some activities resulted in completed product <i>(0 points)</i>		
• Most activities resulted in completed product <i>(20 points)</i>		
• All activities resulted in completed product <i>(30 points)</i>		
<b>Quality of activity product</b>	<b>20</b>	
• Products below industry standard <i>(0-6 points)</i>		
• Products meet minimum industry standards <i>(7-12 points)</i>		
• Products exceed minimum industry standard <i>(13-20 points)</i>		
<b>TOTAL POINTS</b>	<b>200</b>	

### Appendix A: AFNR Career Cluster Content Standards

	Performance Measurement Levels	Event Activities Addressing Measurements	Related Academic Standards
<b>ABS.01.01. Performance Indicator: Apply principles of capitalism in the business environment.</b>			Social Studies: 7b and 7g
	ABS.01.01.01.a. Recognize principles of capitalism as related to	selling, floral arrangement, corsage, dish garden	
<b>ABS.01.02. Performance Indicator: Apply principles of entrepreneurship in businesses.</b>			Social Studies: 7d
	ABS.01.02.01.b. Classify the characteristics of successful entrepreneurs in AFNR businesses.	selling	
<b>ABS.02.03. Performance Indicator: Apply appropriate management skills to organize a business.</b>			Language Arts: 12; Social Studies: 7f
	ABS.02.03.01.c. Implement management approaches to assure efficiency and profitability.	team activity	
<b>ABS.06.04. Performance Indicator: Develop specific tactics to market AFNR products and services.</b>			Social Studies: 7b, 7g and 7h
	ABS.06.04.01.b. Develop advertising campaigns that promote products and services.	media selling, product display	
<b>ABS.06.05. Performance Indicator: Merchandise products and services to achieve specific marketing goals.</b>			Language Arts: 4; Social Studies: 7b and 7d
	ABS.06.05.01.c. Monitor marketing approaches to determine effectiveness in goal achievement and make needed changes in such approaches.	product display, sales	
<b>ABS.07.01. Performance Indicator: Prepare a step-by-step production plan that identifies needed resources.</b>			Language Arts: 4, 5 and 8
	ABS.07.01.01.c. Adapt production processes based on changing product characteristics.	problem solving	
<b>BS.02.04. Performance Indicator: Safely manage biological materials, chemicals and wastes used in the laboratory.</b>			Science: B2, B3, F4 and F5; Language Arts: 7
	BS.02.04.01.a. Prepare simple chemical solutions using standard operating procedures.	plant disorders/diseases, hazardous situations	

<b>ESS.03.02. Performance Indicator: Apply soil science principles to environmental service systems.</b>		Science: B2 and D2; Social Studies: 3k
ESS.03.02.02.b. Relate the activities of microorganisms in soil to environmental service systems.	plant disorders/diseases, hazardous situations, general knowledge exam	
ESS.03.02.03.b. Identify the physical qualities of the soil that determine its use for environmental service systems.	potting, asexual propagation, plant disorders/diseases, general knowledge exam	
<b>ESS.03.05. Performance Indicator: Apply chemistry principles to environmental service systems.</b>		Science: B2, B3 and F4
ESS.03.05.01.c. Apply standard operating procedures for use of chemicals in environmental service systems.	plant disorders/diseases, hazardous situations	
<b>ESS.04.02. Performance Indicator: Manage safe disposal of all categories of solid waste.</b>		Science: F1, F4 and F5
ESS.04.02.01.b. Evaluate environmental hazards created by different types of solid waste, solid waste accumulation and solid waste disposal.	hazardous situations, plant disorders/diseases	
<b>ESS.04.05. Performance Indicator: Manage hazardous materials to assure a safe facility and to comply with applicable regulations.</b>		Science: F4 and F5
ESS.04.05.01.c. Describe the procedures for the treatment and disposal of hazardous materials and hazardous waste.	hazardous situations	
<b>ESS.06.02. Performance Indicator: Maintain tools, equipment and machinery in safe working order for tasks in environmental service</b>		
ESS.06.02.01.b. Operate equipment and machinery in accordance with manufacturers' instructions and OSHA standards, specifically addressing personal protective equipment and proper machine guarding.	hazardous situation, team activity, corsage, dish garden, floral arrangements, plant disorders/diseases	
<b>NRS.01.01. Performance Indicator: Apply knowledge of natural resource components to the management of natural resource systems.</b>		Math: 5a; Science: C4 and F3; Social Studies: 3h and 3k
NRS.01.01.01.a. Identify natural resources.	plant ID, general knowledge exam	
<b>NRS.01.02. Performance Indicator: Classify natural resources.</b>		Science: F3
NRS.01.02.01.b. Identify trees and other woody plants.	plant ID	
NRS.01.02.02.b. Identify herbaceous plants.	plant ID	

<b>NRS.03.01. Performance Indicator: Produce, harvest, process and use natural resource products.</b>		Science: F3
	<b>NRS.03.01.01.a.</b> Describe forest harvesting methods.	problem solving, general knowledge exam (harvesting of flowers)
<b>PS.01.01. Performance Indicator: Classify agricultural plants according to taxonomy systems.</b>		Science: C3
	<b>PS.01.01.01.c.</b> Classify agricultural plants according to the hierarchical classification system, life cycles, plant use and as monocotyledons or dicotyledons.	plant ID, general knowledge exam, problem solving
	<b>PS.01.01.02.c.</b> Identify agriculturally important plants by scientific names.	plant ID
<b>PS.01.02. Performance Indicator: Apply knowledge of plant anatomy and the functions of plant structures to activities associated with plant systems.</b>		Science: B6, C3 and C5
	<b>PS.01.02.01.c.</b> Apply the knowledge of cell differentiation and the functions of the major types of cells to plant systems.	general knowledge exam, potting plants, asexual propagation
	<b>PS.01.02.02.c.</b> Relate the active and passive transport of minerals into and through the root system to plant nutrition.	general knowledge exam, problem solving, plant disorders/diseases
	<b>PS.01.02.03.c.</b> Apply concepts associated with translocation to the management of plants.	general knowledge exam
	<b>PS.01.02.04.c.</b> Explain the relationships between leaf structure and functions and plant management practices.	general knowledge exam, problem solving, asexual propagation
	<b>PS.01.02.05.c.</b> Apply the knowledge of flower structures to plant breeding, production and use.	asexual propagation, general knowledge exam, potting plant
	<b>PS.01.02.06.c.</b> Apply the knowledge of seed and fruit structures to plant culture and use.	general knowledge exam, problem solving

<b>PS.01.03. Performance Indicator: Apply knowledge of plant physiology and energy conversion to plant systems.</b>		Science: B6 and C5
	<b>PS.01.03.01.c.</b> Explain the light-dependent and light-independent reactions that occur during photosynthesis and apply the knowledge to plant management.	general knowledge exam, problem solving
	<b>PS.01.03.02.c.</b> Explain the four stages of aerobic respiration and relate cellular respiration to plant growth, crop management and post-harvest handling.	general knowledge exam, asexual propagation
	<b>PS.01.03.03.c.</b> Relate the principles of primary and secondary growth to plant systems.	potting plants, pinching, general knowledge exam
	<b>PS.01.03.04.c.</b> Select plant growth regulators to produce desired responses from plants.	general knowledge exam, problem solving, plant disorders/diseases
<b>PS.02.01. Performance Indicator: Determine the influence of environmental factors on plant growth.</b>		Science: C6
	<b>PS.02.01.01.c.</b> Evaluate plant responses to varied light color, intensity and duration.	general knowledge exam, problem solving
	<b>PS.02.01.02.c.</b> Design, implement and evaluate a plan to maintain optimal conditions for plant growth.	general knowledge exam, problem solving, potting plants
<b>PS.02.02. Performance Indicator: Prepare growing media for use in plant systems.</b>		Science: B2
	<b>PS.02.02.01.b.</b> Describe the physical characteristics of growing media and explain the influence they have on plant growth.	asexual propagation, potting plants, general knowledge exam, plant disorders/diseases
	<b>PS.02.02.02.b.</b> Discuss how soil drainage and water-holding capacity can be improved.	general knowledge exam, plant disorders/diseases
<b>PS.02.03. Performance Indicator: Develop and implement a fertilization plan for specific plants or crops.</b>		Math: 4B; Science: A2
	<b>PS.02.03.01.c.</b> Monitor plants for signs of nutrient deficiencies and prepare a scouting report.	plant disorders/diseases
	<b>PS.02.03.02.a.</b> Discuss the influence of pH and cation exchange capacity on the availability of nutrients.	plant disorders/diseases, general knowledge exam
	<b>PS.02.03.04.a.</b> Identify fertilizer sources of essential plant nutrients, explain fertilizer formulations and describe different methods of fertilizer application.	plant disorders/diseases, general knowledge exam

<b>PS.03.01. Performance Indicator: Demonstrate plant propagation techniques.</b>		Science: C2
PS.03.01.01.a. Explain pollination, cross-pollination and self-pollination of flowering plants.	general knowledge exam	
PS.03.01.02.a. Demonstrate sowing techniques and provide favorable conditions for seed germination.	general knowledge exam	
PS.03.01.03.c. Evaluate asexual propagation practices based on productivity and efficiency.	asexual propagation, general knowledge exam	
<b>PS.03.02. Performance Indicator: Develop and implement a plant management plan for crop production.</b>		Science: C5 and C6; Language Arts: 7
PS.03.02.01.b. Inspect propagation material for evidence of pests or disease.	plant disorders/diseases	
PS.03.02.02.c. Prepare growing media for planting.	potting, asexual propagation, general knowledge exam	
PS.03.02.05.a. Explain the reasons for controlling plant growth.	general knowledge exam, pinching plants	
<b>PS.03.03. Performance Indicator: Develop and implement a plan for integrated pest management.</b>		Science: C4 and C6; Language Arts: 7
PS.03.03.01.b. Identify major local weeds, insect pests and infectious and noninfectious plant diseases.	plant disorders/diseases, general knowledge exam	
PS.03.03.02.c. Predict pest and disease problems based on environmental conditions and life cycles.	plant disorders/diseases, general knowledge exam	
PS.03.03.03.c. Employ pest management strategies to manage pest populations, assess the effectiveness of the plan and adjust the plan as needed.	plant disorders/diseases, general knowledge exam	
PS.03.03.04.b. Explain procedures for the safe handling, use and storage of pesticides.	hazardous materials, general knowledge exam	
<b>PS.04.01. Performance Indicator: Create designs using plants.</b>		Language Arts: 12
PS.04.01.01.c. Select plants, hard goods, supplies and other materials for use in a design based on a range of criteria.	corsage, team activity, dish garden, floral arrangement, growing procedure, general knowledge exam	
PS.04.01.02.c. Create and implement designs by following established principles of art.	floral arrangement, team activity, corsage, dish garden	

<b>CS.01.01. Performance Indicator: Action: Exhibit the skills and competencies needed to achieve a desired result.</b>		Social Studies: 4d and 4h
CS.01.01.01.c. Work independently and in group settings to accomplish a task.	team activity, practicums, general knowledge exam	
CS.01.01.02.c. Assess outcomes to determine success for a task.	corsage, team activity, dish garden, floral arrangement, growing procedure, job interview, sales	
CS.01.01.03.c. Implement an effective project plan.	team activity, dish garden, floral arrangement, corsage	
CS.01.01.04.b. Use appropriate and reliable resources to complete an action or project.	all event activities	
CS.01.01.06.c. Develop strengths and talents of team members so that all can achieve success.	team activity	
<b>CS.01.02. Performance Indicator: Relationships: Build a constituency through listening, coaching, understanding and appreciating others.</b>		Language Arts: 12; Social Studies: 4h
CS.01.02.02.c. Engage others in conversations to respond to an obstacle when completing a task.	team activity, sales, job interview	
CS.01.02.04.c. Evaluate the effectiveness of team members.	team activity	
<b>CS.01.06. Performance Indicator: Continuous Improvement: Pursue learning and growth opportunities related to professional and personal aspirations.</b>		Science: A4; Language Arts: 8; Social Studies: 4h
CS.01.06.03.c. Use problem solving strategies to solve a professional or personal issue.	problem solving	
<b>CS.02.03. Performance Indicator: Professional Growth: Develop awareness and apply skills necessary for achieving career success.</b>		Language Arts: 12; Social Studies: 4a
CS.02.03.03.c. Demonstrate employability skills for a specific career.	job interview	
<b>CS.02.04. Performance Indicator: Mental Growth: Demonstrate the effective application of reasoning, thinking and coping skills.</b>		Math: 6C; Science: A4; Language Arts: 4, 8
CS.02.04.01.c. Demonstrate critical and creative thinking skills while completing a task.	media selling, problem solving	
CS.02.04.02.c. Implement effective problem solving strategies.	problem solving	
CS.02.04.03.c. Demonstrate the skills needed to negotiate with others.	customer complaint, sales	

<b>CS.03.01. Performance Indicator: Communication: Demonstrate oral, written and verbal skills.</b>		Language Arts: 4, 5 and 12
CS.03.01.02.c. Demonstrate effective use of a resume as part of an effort to obtain a job.	job interview	
CS.03.01.03.c. Make effective business presentations.	sales, media selling, customer complaint	
<b>CS.05.01. Performance Indicator: Manage organizational structures and processes to better serve customers.</b>		Social Studies: 7a
CS.05.01.01.c. Implement a plan to manage relationships with both internal and external customers.	team activity, sales	
<b>CS.06.04. Performance Indicator: Examine health risks associated with a particular skill to better develop personnel safety guidelines.</b>		Science: F1 and F5
CS.06.04.01.c. Implement a plan to mitigate the level of contamination or injury identified in the workplace.	hazardous situation, general knowledge exam	
<b>CS.07.01. Performance Indicator: Apply safety/health practices to AFNR worksites.</b>		Science: F1 and F5
CS.07.01.01.b. Use appropriate personal protective equipment for a given task.	hazardous situation, general knowledge exam	
<b>CS.07.03. Performance Indicator: Follow appropriate procedures in case of an emergency.</b>		
CS.07.03.01.b. Develop various emergency response plan requirements for a facility.	hazardous situation	
<b>CS.07.04. Performance Indicator: Assess workplace safety.</b>		Science: F5
CS.07.04.01.c. Apply general workplace safety precautions/procedures.	hazardous situation, general knowledge exam	
CS.07.04.02.c. Evaluate general workplace safety precautions/procedures for compliance with regulations.	hazardous situation, general knowledge exam	
<b>CS.08.01. Performance Indicator: Evaluate and select the appropriate tool to perform a given task.</b>		
CS.08.01.01.c. Use tools and equipment appropriately to complete a specific task.	floral arrangement, corsage, sales, dish garden	
<b>CS.09.02. Performance Indicator: Apply skills with computer software to accomplish a variety of business activities.</b>		Math: 6C; Science: A3
CS.09.02.01.b. Use basic software systems such as spreadsheet and word processing to complete a task.	job interview, media selling	

**Appendix B: Related Academic Standards**

National academic standards for mathematics, science, English language arts and social studies related to this event are reported below. The statements are based on information in reports of the respective associations/organizations in the academic areas. Some adjustment of numbering was done to facilitate the process of alignment with the standards that have been developed in the pathways of the Agriculture, Food and Natural Resources (AFNR) Career Cluster.

The approach was to determine the presence of alignment between the content standards, expectations or thematic strands of the four academic areas and the performance indicators of the AFNR Standards. Supporting statements have been included to clarify content of the respective content standards, expectations or thematic strands. The statements were initially developed independently by the respective organizations and, therefore, are not parallel in wording and presentation. Occasionally minor editing was done to adjust the background or stem of a statement but not the statement itself.

**Mathematics**

4. Standard and Expectations: Measurement
  - 4B. Apply appropriate techniques, tools and formulas to determine measurements.
5. Standard and Expectations: Data Analysis and Probability
  - 5A. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.
6. Standard and Expectations: Problem Solving
  - 6C. Apply and adapt a variety of appropriate strategies to solve problems.

**Science**

- A. Content Standard: Science as an Inquiry
  - A2. Design and conduct scientific investigations.
  - A3. Use technology and mathematics to improve investigations and communications.
  - A4. Formulate and revise scientific explanations and models using logic and evidence.
- B. Content Standard: Physical Science
  - B2. Structure and properties of matter.
  - B3. Chemical reactions.
  - B6. Interactions of energy and matter.
- C. Content Standard: Life Science
  - C2. Molecular basis of heredity.
  - C3. Biological evolution.
  - C4. Interdependence of organisms.
  - C5. Matter, energy and organization in living systems.
  - C6. Behavior of organisms.
- D. Content Standard: Earth and Space Science
  - D2. Geochemical cycles.
- F. Content Standard: Science in Personal and Social Perspectives
  - F1. Personal and community health.
  - F3. Natural resources.
  - F4. Environmental quality.
  - F5. Natural and human-induced hazards.

**English Language Arts**

4. Students adjust their use of spoken, written and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.
5. Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.
7. Students conduct research on issues and interests by generating ideas and questions and by posing problems. They gather, evaluate and synthesize data from a variety of sources (e.g., print and non-print texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.
8. Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.
12. Students use spoken, written and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion and the exchange of information).

**Social Studies**

3. Thematic Strand: People, Places and Environments
  - 3h. examine, interpret and analyze physical and cultural patterns and their interactions, such as land use, settlement patterns, cultural transmission of customs and ideas and ecosystem changes;
  - 3k. propose, compare and evaluate alternative policies for the use of land and other resources in communities, regions, nations and the world.
4. Thematic Strand: Individual Development and Identity
  - 4a. articulate personal connections to time, place and social/cultural systems;
  - 4d. apply concepts, methods and theories about the study of human growth and development, such as physical endowment, learning, motivation, behavior, perception and personality;
  - 4h. work independently and cooperatively within groups and institutions to accomplish goals;
7. Thematic Strand: Production, Distribution, and Consumption
  - 7a. explain how the scarcity of productive resources (human, capital, technological and natural) requires the development of economic systems to make decisions about how goods and services are to be produced and distributed;
  - 7b. analyze the role that supply and demand, prices, incentives and profits play in determining what is produced and distributed in a competitive market system;
  - 7h. apply economic concepts and reasoning when evaluating historical and contemporary social developments and issues;
  - 7d. describe relationships among the various economic institutions that comprise economic systems such as households, business firms, banks, government agencies, labor unions and corporations;
  - 7f. compare how values and beliefs influence economic decisions in different societies;
  - 7g. compare basic economic systems according to how rules and procedures deal with demand, supply, prices, the role of government, banks, labor and labor unions, savings and investments and capital;