Floriculture

Nebraska Career Development Event Handbook and Rules for 2023-2027

1. PURPOSE

Floriculture is a discipline of horticulture concerned with the growing and marketing of flowers and ornamental plants, in addition to, usage in floral arrangement and design.

The floriculture industry encompasses the following:

- Greenhouse and field production and management
- Garden center and floral shop operations and management
- Floral design and management

The Nebraska Floriculture Career Development Event is designed to create an interest in careers within the floriculture industry through education, investigation and hands-on technical skill development delivered through the agriculture education curriculum.

2. OBJECTIVES

- Identify plant materials, supplies, and equipment utilized in the floriculture industry.
- Demonstrate an understanding of the biological and scientific principles of plant growth and development.
- Develop the skills underlying propagation, variety development, growth requirements, growing techniques, harvesting, marketing and maintenance of established floriculture plants (see appendices for specific skills each year).
- Demonstrate knowledge of plant production methods and systems used in the floriculture industry.
- Identify and recommend approaches to address plant disorders.
- Demonstrate the use of elements and principles of design and related skills (see appendices for specific skills each year).
- Demonstrate proper handling and preparation of fresh cut materials for the floral industry and develop principles of design skills (see appendices for specific skills each year).
- Understand the operation and management of facilities used in floriculture operations.
- Demonstrate general business practices appropriate to the floriculture industry.

3. ELIGIBILITY

This event is open to students in grades 9-12. The top 25% of schools in a district may qualify a team to the state CDE. Teams shall consist of four students. Schools must register a full team, however teams with less than four students may participate and will not be eligible to earn all points.

4. RECOMMENDED ATTIRE

It's recommended that FFA members wear Official FFA Dress. Jackets may be removed during hands-on portions. Non-FFA members should wear professional dress.

5. REQUIRED SUPPLIES

The following items are required/suggested for each student to bring to the competition:

- Two sharpened No. 2 pencils or mechanical pencils using 0.7 or 0.9 mm lead
- Floral scissors or shears
- Hand pruner
- Floral knife
- · Calculator (recommended) phones and tablets are <u>not</u> permitted

One supply toolbox is allowed for the team event. In addition to the tools each participant must bring, the following items are suggested for the toolbox for completion of the activity. No other supplies are allowed.

- Needle nose pliers
- · Non-decorative florist wire
- · "U-glu" or similar adhesive tape (wet glue is <u>not</u> allowed)
- Adhesive tape (pot tape or cellophane)
- · Waxed floral tape (green, white, or other color)
- Corsage or boutonniere pins
- · Acetate ribbon selection (limit 4 rolls) appropriate to event (ribbon will <u>not</u> be supplied at event)
- Non-aerosol leaf shine wipes (aerosol sprays are <u>not</u> allowed)
- Disposable gloves (optional)

For the team activity, the following will be supplied to student teams at the event:

2024: 2 each 6" design bowl, 1 each 1" x 8" bud vase, 1 block floral foam, 1 bunch (25 stems) standard carnations or roses, 1/2 bunch leather-leaf fern, assorted filler flowers & greens

2025: ½ block floral foam, 1 each square or rectangle design tray, spray roses, standard roses, and filler flowers and greens.

2026: 1 block floral foam, 2 each 6" design bowls, 5 bunches assorted chrysanthemums, carnations, and filler flowers & greens.

6. EVENT SEQUENCE

Check the CDE schedule for specific arrival, start and end times, and the event location.

Students shall check in no later than 10 minutes prior to the event start time. Once the event begins, the approximate schedule includes:

- Event Instructions (10 minutes)
- Team Activity (45 minutes)
- Team Separation for individual Activities (10 minutes)
- Individual Plant and Equipment ID Challenge (20 minutes)
- Individual Activity (10 minutes)
- Individual General Knowledge Exam (25 minutes)
- Individual Problem Solving Activity (20 minutes)

NOTE: Instructors will be notified no later than two weeks prior to the event of any additional tools and/or supplies needed for completion of the hands-on challenges, as well as information related to changes in the event activities or scoring.

7. ANNUAL THEME

The Floriculture CDE utilizes annual themes for the activities completed by the team and individual. The following descriptions are provided so participants can focus their preparation annually for the event. Modifications may be necessary based upon the availability of plant materials and other supplies. Teams will be notified prior to the event when possible.

Annual Themes:

2024 <u>Team</u> - Florist Shop Grab and Go Designs-Standards. Create 1 design of each, round, one-sided, and multi-stem bud vase design using the materials provided. Calculate selling price of each design.

Individual - Interpret information on a seed packet

- 2025 <u>Team</u> Prom Party. Create 1 dinner table design, 1 wrist corsage, 1 boutonniere.
 <u>Individual</u> Pruning/pinching plants for training new growth
- 2026 Team Florist Shop Grab and Go Designs- Celebrations. Create 1 each: Happy Birthday, Thinking of you, and Congratulations"
 Individual Woody stem whip grafting

8. EVENT FORMAT

Individual General Knowledge Exam (25 minutes)

Contestants are given a written exam with 35 multiple choice questions evaluating their understanding of plant science, plant production, floriculture methods and activities, floral design and business operations and management. Each correct answer is worth 4 points for a total of 140 points for this section.

Individual Problem Solving Activity (25 minutes)

Story problems are given that involve activities and decisions typical in this industry. Examples include; floral composition sales invoice, determination of quantity of plants that can be grown in a given area, calculation of production/construction cost per unit, selecting pesticide appropriate to identified problem, and determining fertilizer weight for dosing through an injector. Four multiple choice questions (5 points each) are given for each of 7 story problems for a total of 140 points in this section.

Individual Plant and Equipment ID Challenge (20 minutes)

Thirty-five digital images are projected sequentially for 30 seconds and contestants are to choose the most appropriate name from the multiple-choice list provided. Each correct answer is worth 4 points for a total of 140 points in this section.

Individual Activity (10 minutes)

Supplies are provided in a bag to each contestant for completion of the activity related to the annual theme. Instructions are provided within the bag. The contestant will complete the activity, set the final product on their individual identification card at one end of their work station for judging. Contestants must clean up and put unused items back in the bag for collection by the moderators for their submission to be valid. This activity is worth 80 points. Rubic specifics are found in the appendix.

Team Activity (45 minutes)

Materials are provided for each team at their assigned workstation. Instructions are given in written format for team members to construct specific designs, package (if required), and present their final products. Emphasis areas include; *creativity, composition, workmanship, & final presentation (how neatly the display is arranged on the table).* Rubric specifics are found in the appendix. This activity is worth 300 points.

9. SCORING

	Individual Points	Team Points
INDIVIDUAL COMPONENTS		
Identification of Floriculture Plants, Equipment, & Supplies (35 images x 4 points each)	140	560
Individual General Knowledge Exam (35 questions x 4 points each)	140	560
Problem Solving (7 questions x 20 points each)	140	560
Individual Activity 2024 Interpret seed packet information Identify viability (20 points), Estimate vigor (30 points), Determine seeding date (20 points), Identify seed depth (10 points) 2025 Pruning/pinching plants Location (30 points), Methodology (20 points), Uniformity (20 points), Extraneous injury (10 points) 2026 Woody stem whip graft Method (30 points), Wrapping (20 points), Technical skill (20 points), Extraneous injury (10 points) TEAM COMPONENTS	80	320
 Team Activity 2024 Florist Grab and Go Designs-Standards (3 designs and 3 selling price calculations). Each design worth 75 points and each price calculation worth 25 points. 2025 Prom Party- Dinner table composition (100 points, price sheet 25 points), Corsage (75 points, price sheet 25 points), Boutonniere (50 points, price sheet 25 points). 2026 Florist Grab and Go Designs- Celebrations (3 designs and 3 selling price calculations). Each design worth 75 points and each price calculation worth 25 points. 		300
TOTALS	500	2,300

10. TIEBREAKER

To determine the award order for individuals involved in a tie, the following will be utilized in rank order:

- 1. Problem Solving
- 2. Written Exam Score
- 3. Plant and Equipment Identification Score
- 4. Individual Activity Score

To determine the award order for teams that are involved in a tie, the following will be utilized in rank order:

- 1. Team Activity Score
- 2. Problem Solving Score
- 3. Written Exam Score
- 4. Plant and Equipment Identification Score

11. RESOURCE MATERIALS

It's recommended that students study from the following materials in preparation for the event:

- Arteca, R. 2014. Introduction to Horticultural Science, Second Edition. Cengage Learning. ISBN# 978-1111312794
- Scace, P. and DelPrince, J. 2021. Principles of Floral Design, An Illustrated Guide, Second Edition. Goodheart-Willcox Company, Inc. Tinley Park, IL. ISBN: 978-1-64564-049-3
- Shry, C. and Reiley, E. 2016. Introductory Horticulture, 9th Ed. (or previous). Delmar Cengage Learning. ISBN# 978-1285424729

12. STUDY RESOURCES

See previous exam and other materials in the <u>study resources folder</u> which can be found on the Floriculture CDE rules webpage.

13. Debriefing Opportunity

A review of the competition will be provided within one week following the events. Additionally, the superintendent will offer teacher professional development on an occasional basis.

APPENDIX

Appendix 1. Floriculture Plant Identification List

Appendix 2. Floriculture Equipment and Supply Identification List

Appendix 3. Plant Disorders, Causal Agents, and Control Methods

Appendix 4. Individual Activity

Appendix 5. Team Activity Rubrics

Appendix 1. Floriculture Plant Identification List

#, SCIENTIFIC NAME, COMMON NAME

- 101, Aechmea fasciata cv., Silver Vase Bromeliad
- 102, Ageratum houstonianum, Ageratum
- 103, Alstroemeria hybrid cv., Peruvian Lily
- 104, Anemone coronaria, Anemone
- 105, Anethum graveolens cv., Dill
- 106, Angelonia hybrid cv., Angelonia
- 107, Anthurium x andraeanum cv., Flamingo Plant
- 108, Antirrhinum majus cv., Snapdragon
- 109, Aphelandra squarrosa cv., Zebra Plant
- 110, Araucaria heterophylla, Norfolk Island Pine
- 111, Asparagus densiflorus, Sprengeri Fern
- 112, Aster pringlei, Monte Cassino Aster
- 113, Astilbe hybrid cv., Astilbe
- 114, Begonia x semperflorens -cultorum, Wax Begonia
- 115, Begonia x tuberhybrida cv., Tuberous Begonia
- 116, Caladium x hortulanum cv., Caladium
- 117, Calibrachoa hybrid cv., Million Bells
- 118, Callistephus chinensis cv., China Aster
- 119, Campanula hybrid cv., Campanula
- 120, Canna x generalis cv., Garden Canna
- 121, Capsicum annuum, Ornamental Pepper Plant
- 122, Catharanthus roseus, Vinca
- 123, Celosia argentea cv., Cockscomb
- 124, Chamaedorea elegans, Parlor Palm
- 125, Chamelaucium uncinatum, Waxflower
- 126, Cholorophytum comosum cv., Spider Plant
- 127, Chrysanthemum x morifolium, *Florist's Chrysanthemum*
- 128, Clematis hybrid cv., Clematis

- 129, Codiaeum variegatum pictum, Croton
- 130, Crassula argentea, Jade Plant
- 131, Cycas revoluta cv., Sago Palm
- 132, Cyclamen x persicum cv., Florist's Cyclamen
- 133, Cymbidium cv., Cymbidium Orchid
- 134, Cymbopogon cv., Lemongrass (herb)
- 135, Dahlia hybrid cv., Dahlia
- 136, Delphinium consolida cv., Larkspur
- 137, Dendrobium cv., Dendrobium Orchid
- 138, Dianthus caryophyllus cv., Carnation
- 139, Dracaena cincta, Red Edge Dracaena
- 140, Echinocactus cv., Barrel Cactus
- 141, Epipremnum aureum cv., Golden Pothos
- 142, Erica carnea cv., Spring Heather
- 143, Eucalyptus polyanthemos, Silver Dollar Eucalyptus
- 144, Euphorbia pulcherrima cv., Poinsettia
- 145, Eustoma grandiflorum, Lisianthus
- 146, Exacum affine, Persian Violet
- 147, Ficus benjamina cv, Benjamin Fig
- 148, Ficus elastica cv, Rubber Plant
- 149, Fragaria x ananassa cv., Strawberry Plant
- 150, Freesia x hybrida, Freesia
- 151, Gardenia jasminoides, Gardenia
- 152, Gerbera jamesonii, Gerbera Daisy
- 153, Gladiolus x hortulanus cv., Garden Gladiolus
- 154, Gomphrena hybrid cv., Globe Amaranths
- 155, Gypsophila elegans cv., Baby's Breath
- 156, Hedera helix cv., English Ivy
- 157, Helianthus annuus, Sunflower
- 158, Hemerocallis cv., *Daylily*

- 159, Hippeastrum hybrid cv., Amaryllis
- 160, Hosta cv., Hosta
- 161, Hoya carnosa, Wax Plant
- 162, Hyacinthus orientalis cv., Hyacinth
- 163, Hydrangea macrophylla, Big Leaf Hydrangea
- 164, Impatiens hybrid cv., Impatiens
- 165, Impomoea batatas cv., Ornamental Sweet Potato
- 166, Iris x xiphium cv., Dutch Iris
- 167, Senecio cineraria, Dusty Miller
- 168, Justica brandegeana, Shrimp Plant
- 169, Kalanchoe x blossfeldiana cv., Kalanchoe
- 170, Leucanthemum x superbum, Shasta Daisy
- 171, Leucospermum hybrid cv., Pin Cushion Protea
- 172, Liatris spicata, Liatris
- 173, Lilium hybrid cv., Asiatic or Oriental Lily
- 174, Limonium sinuatum, Statice
- 175, Lobularia maritima, Alyssum
- 176, Maranta leuconeura, Prayer Plant
- 177, Matthiola incana cv., Stock
- 178, Monstera deliciosa, Split Leaf Philodendron
- 179, Narcissus hybrid cv., Daffodil or Narcissus
- 180, Nephrolepis exaltata cv., Boston Fern
- 181, Ocimum basilicum cv., Basil
- 182, Opuntia cv., Cactus
- 183, Paeonia cv., Peony
- 184, Paphiopedilum hybrid cv., Ladyslipper Orchid
- 185, Pelargonium x hortorum cv., Zonal Geranium
- 186, Pelargonium peltatum cv., Ivy Geranium
- 187, Pentas hybrid cv., Pentas
- 188, Petroselinum crispum cv., Parsley
- 189, Petunia x hybrida cv., Petunia

- 190, Phalaenopsis cv., Moth Orchid
- 191, Philodendron scandens oxycardium, *Heartleaf Philodendron*
- 192, Pilea cadierei, Aluminum Plant
- 193, Portulaca oleracea cv., Portulaca
- 194, Primula malacoides cv., *Primrose*
- 195, Ranunculus hybrid cv., Ranunculus
- 196, Rhododendron simsii cv., Florist Azalea
- 197, Rosa hybrid cv, Hybrid Tea Rose
- 198, Rumohra adiantiformis, Leatherleaf Fern
- 199, Saintpaulia ionantha cv., African Violet
- 200, Salvia splendens cv., Salvia
- 201, Sansevieria trifasciata cv., Snake Plant
- 202, Schefflera arboricola, Dwarf Schafflera
- 203, Schlumbergera bridgesii, Christmas Cactus
- 204, Sempervivum hybrid cv., Hens and Chicks
- 205, Senecio x hybridus cv., Cineraria
- 206, Sinningia speciosa Fyfiana Group cv, *Florist Gloxinia*
- 207, Solidago hybrid cv, Solidago
- 208, Solenostemon scutellarioides, Coleus
- 209, Spathiphyllum, Peace Lily
- 210, Stephanotis floribunda, Stephanotis
- 211, Strelitzia reginae, Bird of Paradise
- 212, Syngonium podophyllum, Nephthytis
- 213, Tagetes species cv., Marigold
- 214, Tradescantia zebrine, Wandering Jew
- 215, Tulipa cv., Tulip
- 216, Verbena hybrid cv., Verbena
- 217, Viola x wittrockiana cv., Pansy
- 218, Zantedeschia hybrid cv., Calla Lily
- 219, Zinnia cv., Zinnia

Appendix 2. Floriculture Equipment and Supply Identification List

301	#100 Ribbon (satin, sheer, wired)	325	Ellepot propagation cubes
302	#3 Ribbon (satin, sheer, wired)	326	Enclosure card
303	#40 Ribbon (satin, sheer, wired)	327	Fern greening pins
304	#9 Ribbon (satin, sheer, wired)	328	Fertilizer injectors
305	18 Gauge floral wire	329	Floral adhesive
306	28 Gauge floral wire	330	Floral foam
307	Anvil-and-blade pruner	331	Floral knife
308	Backflow preventer	332	Floral preservative
309	Bouquet sleeve	333	Floral stem tape
310	Bulb planter	334	Fogger
311	Cardette	335	Gas mask
312	Cell pack containers	336	Glass vase
313	Ceramic container	337	Glue gun
314	Chemical resistant gloves	338	Glue pan
315	Chenille stem	339	Glue sticks
316	Coconut coir	340	Goggles
317	Compressed air sprayer	341	Granular fertilizer
318	Corsage box	342	Greenhouse thermostat
319	Corsage pin	343	Hanging basket
320	Corsage snips	344	Hearing protection
321	Drip emitter, irrigation	345	Hook-and-blade pruners (bypass
322	Dry foam	prune	
323	Dust mask	346	Hose punch
324	Duster	347	Hose repair coupling
		348	Hose-end repair fitting

349	Hose-end sprayer	376	Sand
350	Hose-end washer	377	Scoop shovel
351	Impulse sprinkler	378	Shade fabric
352	Irrigation tape	379	Sharpening stone
353	Irrigation timer	380	Sheet moss
354	Mist nozzle (mist bed)	381	Siphon injector
355	Nosegay holder	382	Soil moisture meter
356	Nursery container	383	Solenoid valve
357	Oscillating sprinkler	384	Spaghetti tubing (1/4" diameter or
358	Peat moss	less)	
359	Peat pots	385	Spanish moss
360	Pest strips	386	Sphagnum moss
361	pH testing meter	387	Spray suit
362	Polyethylene film	388	Square point (flat) shovel
363	Polyethylene pipe	389	Styrofoam
364	Pot covers	390	Surestik cling
365	Propagation mat	391	Tulle
366	Propagation trays	392	Vermiculite
367	PVC (polyvinylchloride) pipe	393	Water breaker
368	PVC pipe cutter	394	Water picks
369	Resin-coated fertilizer	395	Water soluble fertilizer
370	Respirator	396	Water tubes
371	Ribbon shears	397	Waterproof container tape
		398	Wire cutter
372	Rice hulls	399	Wooden pick
373	Rockwool propagation cubes	400	Wrist corsage holder
374	Rose and stem flower stripper		
375	Safety goggles		

Appendix 3. Plant Disorders, Causal Agents, and Control Methods

CLASSIFICATION 220 Shore Flies

100 Diseases 221 Snails/ Slugs

101 Insects / Pests / Mites 222 Spider Mites

102 Nutritional/ Environmental 223 Stem Rot

IDENTIFICATION:

200 Aphids 225 Tospovirus (INSV and TSWV)

224 Thrips

201 Black Leaf Spot 226 Whiteflies

202 Botrytis – Grey Mold <u>CONTROLS:</u>

203 Cold Temperature (freeze) Chemical:

204 Cold Water Damage 400 Fungicide

205 Damping-off 401 Insecticide

206 Downy Mildew 402 Miticide

207 Ethylene Damage 403 Molluscicide

208 Fungus Gnats 404 No Treatment Listed

209 Insufficient Watering Cultural Control:

210 Iron Deficiency 500 Apply Complete Fertilizer

211 Leaf Miner 501 Correct/ Adjust Temperature

212 Leafhopper 502 Correct/ Adjust Watering

213 Mealybugs 503 Ladybird Beetles

214 Nitrogen Deficiency 504 Nematodes

215 Phosphorus Deficiency 505 Parasitic Wasps

216 Powdery Mildew 506 Predatory Mites

217 Root Rot 507 Reduce Relative Humidity

218 Rust 508 No Treatment Listed

219 Scale

Appendix 4. Individual Activity

Practicum Rubrics

2022 Woody cutting preparation

Criterion	Optimal	Emerging	Incomplete
Proper Technique	30	15	0
Polarity maintained	20	na	0
Methodology	20	10	0
Likelihood of success	10	5	0
	Maximum 80 points		

2023 Transplant seedlings

Criterion	Optimal	Emerging	Incomplete
Technique	30	15	0
Likelihood of success	20	10	0
Uniformity	20	10	0
Amount of injury	10	5	0
	Maximum 80 points		

2024 Interpret Seed packet information

Criterion	Optimal	Emerging	Incomplete
Identified seed viability	20	10	0
Estimated seed vigor	30	15	0
Identified seeding date	20	10	0
Identified seed depth	10	5	0
	Maximum 80 points		

2025 Pruning/pinching plants

Criterion	Optimal	Emerging	Incomplete
Location	30	15	0
Methodology employed	20	10	0
Uniformity	20	10	0
Extraneous injury	10	5	0
	Maximum 80 points		

2026 Woody stem whip graft

Criterion	Optimal	Emerging	Incomplete	
Method	30	15	0	
Wrapping graft	20	10	0	
Technical sill	20	10	0	
Extraneous injury	10	5	0	
	Maximum 80 points			

Appendix 5. Team Activity Rubrics

A. 2024 Florist Grab and Go Designs-Standards

Design 1				
Criteria	Excellent	Emerging	Attempt	No
				Attempt
Creativity	50	38	25	0
Skill	25	19	12	0
Price	25	19	12	0
Determination				
D	esign 1 Maxim	um 100 points		
		Design 2		
Criteria	Excellent	Emerging	Attempt	No
				Attempt
Creativity	50	38	25	0
Skill	25	19	12	0
Price	25	19	12	0
Determination				
D				
		Design 3		
Criteria	Excellent	Emerging	Attempt	No
				Attempt
Creativity	50	38	25	0
Skill	25	19	12	0
Price	25	19	12	0
Determination				
Design 3 Maximum 100 points				
Total Team Score Maximum 300 points				

B. 2025 Prom Party Designs

Design 1- Dinner Table				
Criteria	Excellent	Emerging	Attempt	No
				Attempt
Creativity	75	57	38	0
Skill	25	19	12	0
Price	25	19	12	0
Determination				
С	esign 1 Maxim	um 125 points		
	De	sign 2- Corsage		
Criteria	Excellent	Emerging	Attempt	No
				Attempt
Creativity	50	38	25	0
Skill	25	19	12	0
Price	25	19	12	0
Determination				
С				
	Desi	gn 3- Boutonniere		
Criteria	Excellent	Emerging	Attempt	No
				Attempt
Creativity	30	23	15	0
Skill	20	15	10	0
Price	25	19	12	0
Determination				
Design 3 Maximum 75 points				
Total Team Score Maximum 300 points				

C. 2026 Florist Grab and Go Designs- Celebrations!

Design 1-Happy Birthday				
Criteria	Excellent	Emerging	Attempt	No
				Attempt
Creativity	50	38	25	0
Skill	25	19	12	0
Price	25	19	12	0
Determination				
D	esign 1 Maxim	um 100 points		
	Desigr	n 2- Thinking of Yo	u	
Criteria	Excellent	Emerging	Attempt	No
				Attempt
Creativity	50	38	25	0
Skill	25	19	12	0
Price	25	19	12	0
Determination				
D				
	Design	3- Congratulation	s!	
Criteria	Excellent	Emerging	Attempt	No
				Attempt
Creativity	50	38	25	0
Skill	25	19	12	0
Price	25	19	12	0
Determination				
Design 3 Maximum 100 points				
Total Team Score Maximum 300 points				