

Colorado Career Development Events Handbook



Revised February 2022

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2022 State Approved Events

State Approved CDEs			
Contest	Location	2022 Fees	Scantron Form
Agricultural Sales	CSU	\$20	AG SALES/FB MGT./ AG MECH #105481
Agriculture Technical and Mechanical Systems	CSU	\$105	HORTICULTURE #105482
Dairy Cattle Judging	CSU	\$105	LIVESTOCK #476-3
Employment Skills	CSU	\$50	
Farm and Agribusiness Management	CSU	\$25	AG SALES/FB MGT./ AG MECH #105481
Field Crops	CSU	\$20	CROPS #526CO-1
Floriculture	CSU	\$90	HORTICULTURE #105482
Food Products & Processing	CSU	\$75	FOOD SCIENCE #713-3
Horse Judging	CSU	\$60	LIVESTOCK #476-3
Land Judging	CSU	\$75	COLORADO LAND #601CO-2
Livestock Evaluation	CSU	\$65	LIVESTOCK #476-3
Meats Evaluation and Technology	CSU	\$65	MEAT EVALUATION #480-4
Milk Quality and Products	CSU	\$75	MILK QUALITY AND PRODUCTS 479-6
Nursery/Landscape	TBD	TBD	HORTICULTURE #105482
Veterinary Science	CSU	\$50	HORTICULTURE #105482

Career Development Events General Rules

Rules and events are evaluated and changes are recommended by CVATA CDE/LDE Committee. The committee should meet at CVATA Summer and Mid-Winter Conference. Major CDE/LDE changes will only happen during event revision cycles.

Event Rules

- All participants must turn in to the State FFA Advisor the following completed forms (with all signatures):
 - Authorization Form
 - Medical Release Form
 - Parent Consent Form
- All forms are required to participate at the Colorado FFA Career Development Events. This requirement is for CSU liability. Your local liability forms will not be accepted. The form will be available on the website.
- **NO ELECTRONIC DEVICES ARE ALLOWED TO BE USED AT THE EVENTS UNLESS SPECIFIED BY THE SUPERINTENDENT** (CELL PHONE, IPOD, TABLET, SMART WATCH, ETC.). These can be cause for disqualification.
- This competitive events activity is approved by the Colorado Community College and Occupational Education System and will be hosted by and held at Colorado State University and the location of the annual State FFA convention.
- Any student is eligible, who is a bona fide FFA member, enrolled in secondary agricultural education. If any ineligible participant competes in any event, the team from which the participant is a member shall be declared ineligible for any awards. If a student is entered and is not a dues-paid FFA member on the state roster, they cannot participate. All protests concerning participant eligibility should be made by an instructor and directed to the Chair of the State CVATA CDE/LDE Committee.

- The FFA awards and events are conducted to put to use the skills learned in agriculture/agricultural education and to create interest and provide incentive and recognition to members in the different fields of agriculture. Further, it is the purpose of the Colorado Agricultural Education Career Development Event to:
 - Stimulate interest and enhance the instructional program.
 - Stimulate interest and awareness of agriculture occupations.
 - Recognize FFA members at the local, state, and national levels for exceptional accomplishments in progressing toward specific occupational objectives in agriculture.
 - Provide students with experience in developing skills necessary for employment in agriculture.
- Assistance will be provided to students who have special needs if the school notifies the event coordinator by submitting the special needs request form by the deadline.
- Individual departments of Colorado State University will be in charge of the events, which are hosted by CSU. Each department will be responsible for the selection and appointment of an event superintendent and judges. Superintendents will present awards.
- The State CVATA CDE/LDE Committee will reserve the right to change or amend rules. Changes in rules will be coordinated through the contest coordinator at Colorado State University or others facilitating the contest.
- Each event will have a specified number of participants with each school limited to one team per event, but a school may be represented by less than a full team.
- All coaches and other adult advisors, parents, drivers, etc. must remain away from the CDE event and other demonstration events and tabulating areas during the competition, unless volunteering as an Ag Teacher Helper through CVATA.
- Members of the State CVATA CDE/LDE Committee and other Ag Teacher volunteers will be present at all events to help in the management of the events. If they cannot be present, they will find a suitable substitution and will communicate this to the CSU Contest Coordinator. These will be the only advisors/coaches present at the events while they are running. Any other advisor attending must be on a predetermined list.

- Superintendents and teachers who are assisting in the management of the events and witness incidents, which violate the rules, may file the "Incident Report Form" to the contest coordinator or the State FFA Advisor. If issues cannot be resolved, the State FFA Executive Committee will be asked to consult and rule on the incident.
- As this is a sanctioned FFA Event, all protests regarding CDE/LDEs (participation or scores) shall be made in writing to the State FFA Advisor who will work with the Colorado FFA Executive committee to make any necessary rulings needed.
- ***No refunds any event after the registration deadline.***

Participation and Dress

- Any FFA member attending the CSU State Events not competing in one of the events or who is not a state officer, will be disqualified from any further participation. No alternates or other members will be allowed. Requests for exceptions to this rule must be made to the FFA Advisor (CCCS) prior to the state events occurring.
- Per the CDE/LDE Committee (2/28/18) a team from another state may make a formal request to be allowed to participate in the State CDE Event if their home state does not offer a state qualifying event. Participation will be determined on a case-by-case basis by the CDE/LDE Committee following the formal request and based upon consultation of the superintendent offering the event to determine capacity. The team will pay regular fees, receive scores, but will not be eligible for awards.
- No FFA member may drive a car to, from, or during the events unless accompanied by an adult sponsor approved by the school administration. This does not apply to state FFA officers.
- Advisors are required to stay with their members in the motel or hotel and be with them when members are not competing. The event activities are considered an extension of the classroom.
- Student Attire
See Ag Teacher Grid for appropriate attire for each event, since events are held outside and there may be inclement weather, students should bring warm clothing. The official dress will be required for attendance at the awards presentations. All attire disputes will be referred to the State FFA Advisor.

- All livestock, crop samples, or other materials that may be used in the state event will not be available for practice work by any active agriculture student or instructor six weeks prior to the dates of the actual event. In the event that a University-sponsored event involves the use of CSU livestock or material and is scheduled during this six week period, a determination will be made by the State FFA Advisor whether participation by agriculture students or instructors will be permitted. If there is a question as to whether participation in such an event will be permitted, correspondence should be directed to the State Advisor and written permission must be granted before such participation. In the event that this rule is violated, the school will not be eligible for any awards in the event area in which the violation occurred. All determinations of event violations will be made by the event committee upon submission of a written protest to the State FFA Advisor and State CVATA CDE/LDE Committee.
- No supplementary materials that assist a student will be allowed in any event unless approved by the respective event superintendent and/or state Ag Ed staff.
- Any participant who confers with other individuals without authorization while the event is in progress will be immediately barred from the event by the event personnel. This policy will be strictly enforced.
- Late arrivals:
 - Teams arriving after the judging commences will not be scored for official placing.
- If one or more members are unable to continue the CDE due to sickness or accident, the remaining team member(s) will be able to continue and compete for individual awards.
- When a student is registered as an event participant in any state event, the teacher's submission of the entry form shall be considered a certification that the student has received training and safety instruction for that event. When, in the judgment of an event superintendent, a participant in any state finals event demonstrates incompetency or operates in a manner considered hazardous, that participant may be removed from the event. The judgment of the event superintendent shall be final.

- In the event a student is eligible for membership in two or more chapters; the student can compete as a member of one chapter only and compete only for that chapter during that school year. The chapter they are eligible to compete with will be the one where they are enrolled at the time of the competition.
- All results are final unless otherwise notified by the State FFA office.
- Schools are to be responsible for having someone pick up awards in their absence per the policy adopted by the State CVATA CDE/LDE Committee.
- Students who have previously been a member (generated a score) of a State Winning team or have competed at the national competition in that event are NOT eligible to compete in the same event.
- In events requiring participants to perform in official dress, a 10% overall point deduction will be applied if the requirement is not met.

Cancellation of Events

- In order to hold the event the participation levels must be 5 full teams, 20 individuals on CDE's or 10 individuals on LDE's, any less will result in event cancellation. Three years in a row of canceled events will become permanently canceled and must go through a petitioning process to get reinstated.
- In order to start a new event (or reinstate a canceled event) the following procedures should be followed:
 - At least one exploratory event should be offered at a district or state-wide level to generate sufficient interest in the event.
 - The exploratory event would include at least 2 components of the proposed state event. After such an offering, a written proposal must be presented to the State FFA Executive Committee one year prior to the first offering of the event.
 - The event must meet the minimum participation levels. The event must be approved by the State FFA Executive Committee as a reasonable event to offer in Colorado.
- A final list of CDEs being offered for the year will be announced at the Mid-Winter conference and published in the handbook in the week following Mid-Winter conference.

Responsibility of Conduct: (Please review Colorado FFA Discipline Policy and Procedures Handbook)

- No team will be permitted to register or compete in the event unless chaperoned during the entire stay by the FFA advisor/team coach, principal, superintendent, or other designees of the local high school.
- The person in charge of each FFA group will be responsible for the entire group at all times.
- All team members and coaches will conduct themselves in such a manner that will not bring criticism to their chapter and to Colorado FFA.

Awards

- Team and individuals will be scored on a point basis. Individual awards will be as follows:
 - Approximately 15% rated Gold receiving a gold plaque.
 - Approximately 15% rated Silver receiving a silver plaque.
 - Approximately 15% rated Bronze
- CDEs with low participation (fewer than 10 teams) will be awarded natural breaks.
- State winning teams will each receive special recognition plaques.
- As approved by the State CVATA CDE/LDE Committee, high individual and team awards will be announced and presented in ranked order.

Agricultural Sales

Purpose

The purpose of the Agricultural Sales Career Development Event is to evaluate and demonstrate skills that are essential for an individual to be successful in the agricultural sales career. Students will also develop an understanding of the opportunities available in the sales industry. The process of selling agricultural products is essential for production and marketing of agricultural products.

Objectives

The agricultural sales career development event provides the opportunity for the participant to:

- Develop verbal, written and interactive communication skills.
- Demonstrate skills to build rapport with customers.
- Discuss features and benefits of a product.
- Identify potential customer objections.
- Introduce the product to prospective customers.
- Develop a sales call that determines and addresses customers' needs and objections.
- Attempt to close the sale by asking for a customer's buying decision.
- Identify and demonstrate the use of questions throughout the sales process.
- Develop active listening skills.

Event Rules

- No school shall be represented by more than **four** persons. This number shall constitute a team; however, a school may be represented by less than four individuals.
- **Official FFA dress** is required.

Event Format

The event will be composed of three parts. Individual scores will be comprised of the written exam and individual sales activity. The team score will be comprised of the team activity and all individual scores.

- The product(s) utilized in the event and activity examples will be announced in February prior to the event on the CDE webpage. Provided product information may include appropriate company information and a price list.
- Each participant will be allowed to bring a one-inch binder to the event containing the provided product information and any other information gathered by the participant.
- All teams will report to take the written exam then be released to report at an assigned time for presentations.
- The National FFA Agricultural Sales rubrics will be used.

Individual Written Exam – 50 points

- The written exam is designed to evaluate an individual's knowledge of sales skills. The listed resources will be used as a basic resource but the questions will be generated based on basic sales concepts. The exam will not exceed 50 questions and 50 minutes. The questions will consist of multiple choice, fill in the blank, short answer, and essay format. Point values will be assigned to each question based on the skill level of the question.

Team Activity – 150 points

- Each participant will be provided product information for the products being used in the team activity. This information will be distributed to schools via the state CDE website.
- Team members will work together to demonstrate teamwork, group dynamics, problem solving, data analysis, decision making, and oral communications.
- Teams will be allowed to use their one-inch binder for the event.
 - The following information will be provided to the team at the event as if they were a group of salespeople working together to develop the pre-call planning prior to conducting a sales call.
 - Product information (before event)
 - Profiles of different customers
- The team will be provided with paper and writing utensils. No presentation equipment such as laptops, flipcharts or dry erase boards will be allowed.

- The team will then develop the strategy (for the product(s) provided prior to the event) necessary to sell the product(s) in a face-to-face sales call. This strategy should include but not be limited to:
 - Determining potential customer needs and wants.
 - Identify features and benefits of the product(s) that address the customer's needs and wants.
 - Identify potential customer objections and prepare to address them.
 - Identify possible related/complementary products and their suggestive selling strategies.
 - Develop information and gather questions to be utilized in clarifying the customer's needs and wants
- Teamwork and involvement of team members will be judged during this event. Students are expected to justify their decisions based on selling principles.
- The team will be given a maximum of 15 minutes to analyze the information given and develop a presentation to provide the information listed above. During this 15 minute period the team will be judged using the team activity scorecard found in this chapter.
- At the conclusion of the 15 minutes, the team will present to the judges who are acting as the team's immediate supervisors. The presentation will be no longer than ten (10) minutes to ask questions of all team members. The questions will be taken from all aspects of the team event.

Individual Sales Activity – 150 points

- Participants will directly sell the product(s) to judge(s). Students will be given a preliminary customer profile and will have at least five minutes to review the preliminary customer profile prior to meeting with the judge(s). The judge(s) will act as the customer which may include not buying the product. Participants will have to establish rapport, ask probing questions to ensure they meet the customer's needs, and clarify customer information as a part of the sales call. Participants will have 10 minutes to interact with the judge(s). Participants are allowed to use their one-inch product information binder during the individual activity.

Event Scoring

Activities	Individual Points	Team Points
Written Exam (50 questions @ 1 point each)	50	150
Team Activity	x	150
Individual Sales Activity	150	450
MAXIMUM POINTS	200	750

Tiebreakers

Individual

- Written Exam
- Individual Sales Call
- Team Activity

Team

- Written Exam
- Team Activity
- Total Individual Sales Activity

References

This list of references is not intended to be all inclusive.

- Ditzenberger and Kidney. **SELLING-HELPING CUSTOMERS BUY.** South Western Publishing Company, Cincinnati, OH, 1986. To order: (800) 543-7972. Stock number: S20. Cost \$14.95
- CRISP Publications, 1200 Hamilton Court, Menlo Park, CA 94025-1427. (800) 442-7477. FAX (650) 323-5800
 - **PROFESSIONAL SELLING**, Rebecca L. Morgan, ISBN 0-931961-42-4
 - **SALES TRAINING BASICS**, Elwood N. Chapman, ISBN 1-56052-119-8

- **CLOSING**, Virden J. Thorton, ISBN 1-56052-318-2
- Sperich, Woolverton, Beierlein. **INTRODUCTION TO AGRIBUSINESS**. Prentice Hall Career and Technology, 1994. Publisher's address: Englewood Cliffs NJ 07632
- Downey, Jackson, Stevens **AGRI-SELLING**. Century Communications, Inc., 1984 Publisher's address: 5520-G West Touhy Ave., Skokie, IL 60077.

Agriculture Technical and Mechanical Systems

Purpose

The Agriculture Technical and Mechanical Systems career development event is designed to prepare students for the workforce with a strong knowledge base and ability to comprehend the interaction of complex systems. Agricultural technology and mechanical systems consist of strong technical content, complemented by the development of practical, hands-on skills and problem solving abilities.

Objectives

The Agriculture Technical and Mechanical Systems provides the students the opportunity to:

- Demonstrate mastery of subject matter and skills found in the agricultural mechanical systems pathway.
- Demonstrate problem solving techniques related to the agricultural mechanical pathway.
- Demonstrate knowledge and understanding of common problems and tools related to the pathway.
- An understanding of modern technology.

Event Rules

- Each chapter may enter only one team of up to four participants.
- The Agriculture Mechanics event will be a one-day event, occurring Monday, at the CSU CoBank Center on the CSU ARDEC.
- All general rules for the Colorado FFA Career Development Events apply to this event.
- The event supervisors have the authority to disqualify any participants (not the school) caught cheating or guilty of any other inappropriate conduct. It is the duty of the event supervisors to enforce all rules. At the discretion of the event supervisors, participants may be split into groups with only one member from a school in each group.
- Students must compete in this event to compete in the National Career Development Event.
- Participants must supply the following PPE:

- Coveralls/shop coat
- Work shoes or work boots. Tennis shoes will not be permitted.
- Approved safety glasses (ANSI Z87)
- Gloves
- Arc and Oxy-Acetylene welding helmets or welding goggles.
Note: two forms of eye protection will be required for Welding – BOTH safety glasses AND goggles (or face shield)/helmets are required. Shaded safety glasses are NOT sufficient and students will NOT be allowed to participate if this is their only eye covering.
- Participants must carry all equipment with them.
- **Students without the above equipment will be disqualified. An equipment check sheet is included on the last page of the Agriculture Mechanics Events Rules which will be required for check-in and registration.**
- Participants disregarding safety precautions, thereby endangering themselves or others will be disqualified and all earned scores will be nullified. Standards for safety are expected to be followed by participants and may also be included as content in the written examination.

Event Format

Knowledge (written exam)

- 200 points – Includes all specific and general standards every year.
- Will include identification of tools, equipment, materials, and supplies that relate to the individual section.

Problem Solving

- 100 points – Standards included pertain to rotation listed above

Skill or Application

- 200 points – Standards included pertain to the rotation listed above

Total

- 500 points

Total Event

- 2,000 points for individuals and 6,000 points for the team

Ag Power

- Content Areas Included in Odd Years
 - Small Gas Engines
 - Diesel Engine
- Content Areas Included in Even Years
 - Hydraulics
 - Electric Motors, controls & sensing devices

Ag Fabrication

- Content Areas included in all years of competition
 - Welding processes
 - Welding blueprint and symbols
 - Bill of materials and construction steps
 - Tool conditioning
 - Metal layout and measuring
- Content Areas included in odd years
 - Stick and/or Oxy/Fuel cutting or welding
 - Metalworking (cold and hot)
- Content Areas included in even years
 - Wire-Feed and/or Oxy/Fuel cutting or welding
 - Tool conditioning

Ag Construction

- Content Areas Included in Odd Years
 - Carpentry and building design
 - Residential plumbing
- Content Areas Included in Even Years
 - Concrete and masonry
 - Residential electrical wiring
- Content Areas Included Every Year
 - Building blueprints

Ag Equipment, Technology & Natural Resources

- Content Areas Included in Odd Years
 - Nonpowered ag equipment operation
 - Adjustment and calibration of equipment
- Content Areas Included in Even Years
 - Surveying and land measurement
 - Soil conservation practices
 - Irrigation technology
 - GIS and GPS

Event Scoring

Activities	Individual Points	Team Points
Written Test/Tool ID	200	600
Problem Solving	100	300
Skill or Application	200	600
MAXIMUM POINTS	500	1,500
500 points per each area (Ag Power, Ag Fabrication, Ag Construction and Ag Equipment, Technology & Natural Resources)		
MAXIMUM POINTS	2,000	6,000

Tiebreakers

- Combined written exam score

Welding Rubric (this will be used to grade all welding skills)

GRADE	POINTS
5+	5.00
5	4.78
5-	4.62

4+	4.45
4	4.28
4-	4.12
3+	3.95
3	3.78
3-	3.62

GRADE	POINTS
2+	3.45
2	3.28
2-	3.12
1+	2.95
1	2.78
1-	2.62
0	0

- A letter grade of 5+ through 3- indicates the welder has performed to at least an industry minimum standard, 5+ being at or above industry standards and 3- being minimum standards.
- A letter grade of 2+ through a 1- indicates the welder has applied a weld with discontinuities exceeding industry minimum standards.
- A letter grade of 0 indicates the contestant has made no attempt at making the weld.

Grades will be given based on the amount of discontinuities in the weld as well as overall appearance.

Discontinuities in weld tests include:

- Excessive arc strikes outside the joint

- Excessive spatter
- Undercut
- Overlap
- Porosity
- Improper bead placement
- Lack of fusion between beads
- Lack of consistency
- Cold start

Competencies

The concepts and skills that students should know have guided the development of the components of this event. Competencies are taken from the Colorado Community College Website Competencies are found here.

References:

- **FARM MECHANICS TEXT AD HANDBOOK**; Phipps, et.al.
- **AGRICULTURAL MECHANICS**; Phipps
- **AGRICULTURE MECHANICS: FUNDAMENTALS AND APPLICATIONS**; Cooper, Published by Delmar
- **MODERN AGRICULTURE MECHANICS**; Wakeman, Published by Interstate
- **FUNDAMENTALS OF SERVICE-WELDING**; John Deere, Published by John Deere
- **ELECTRICAL WIRING**; AAVIM
- **WIRING SIMPLIFIED**; II.P, Richter, et.al.
- **LEVELING: A MANAGEMENT PRACTICE FOR AGRICULTURE (ALONG WITH STUDENT WORKBOOK)**; Agricultural Education Dept., University of Arizona or Hobar Publications
- **OXYFUEL GAS WELDING**; Bowditch & Bowditch
 - **LINCOLN PROCEDURE HANDBOOK**; James F. Lincoln Arc Welding Foundation, Published by Goodheart-Wilcox Company, Inc.

Student Check List for Personal Protective and other Equipment

All items will be checked on Monday at registration

Items Needed

- Work Boots/Shoes
- 4-function calculator (no cell phones)
- Coveralls or Shop coat
- Safety Glasses
- Pliers
- Tape measure
- No. 2 Pencil
- Coat/gear for outside (in case of bad weather – Monday)
- Welding Helmet
- Welding Gloves
- Oxy-Acetylene Welding Goggles

Questions should be directed to Nathan Clark CSU 970-491-3930

Dairy Cattle Evaluation

Purpose

The purpose of the Dairy Cattle Evaluation Career Development Event is to provide a competitive event for agricultural education students that emphasizes skills in dairy cattle management and evaluation.

Objectives

- To provide a practical experience to students enrolled in agricultural education with an interest in dairy cattle to help prepare them for industry positions or to manage a modern dairy herd.
- To develop students' skills in observation, analysis.
- To provide experience in the evaluation of dairy cattle type, production records and dairy herd management.
- To encourage agriculture instructors to seek assistance from various resources in the dairy industry. (Examples: dairy breed associations, artificial breeding organizations, state extension dairy specialists, state dairy herd improvement associations, dairy equipment manufacturers, local dairy farmers and breeders, etc.)

Event Rules

- Prior to boarding the bus, participants shall report to the event superintendent to be assigned a number and group. The participant shall be known by this **number** throughout the event and **shall number all cards with this number only.**
- No school shall be represented by more than four persons. This number shall constitute a team; however, a school may be represented by less than four individuals.
- Each participant shall hand in a card, bearing the assigned number, the descriptive name given the class of animals, and placings to the clerk in charge of the group immediately after finishing with each class. While the event is in progress, there shall be no conferring between participants or with anyone else. Participants having questions to ask shall consult the event Superintendent or his representative.
- The second place dairy cattle evaluation team would be certified to

represent Colorado FFA and compete at the North American International Livestock Exposition Dairy Judging Contest in Louisville, Kentucky. The team would be certified to compete by the Colorado State FFA Advisor.

- The third place dairy cattle evaluation team would be certified to represent Colorado FFA and compete at the All American Dairy Judging Contest in Harrisburg, Pennsylvania. The team would be certified to compete by the Colorado State FFA Advisor.

Event Format

- It will be the duty of the Superintendent to take charge of the participants during the event. He will divide the participants into such groups as may be necessary. The superintendent will be responsible for the order in which the classes of stock shall be judged, and the order in which the various groups shall judge these classes. The superintendent will appoint such assistants as may be necessary to take charge of the various groups. The superintendent will enforce the rules, and will be responsible for the distribution and collection of the placing cards. The superintendent shall also collect and compile the placings and scores assigned by the judges.
- Full instructions will be given to the participants at the opening of the event.
- Four animals shall constitute a judging class. Cattle shall be identified during the class, and will be tied and standing. They shall be numbered 1, 2, 3, and 4 from **right to left**. Classes shall be selected from the breed available.
 - Classes may change due to the availability of livestock.

General Knowledge Exam

- The exam will consist of a 50 question exam involving dairy management practices and DHI Records.
- Forty questions will cover various dairy management and industry related topics.
- Ten questions will be answered using a dairy herd record evaluation data sheet to analyze individual cows.
- Participants will have 40 minutes to complete the exam.

Evaluation and Selection

- Six classes of four dairy animals will each be placed on type. • Classes will be selected from the recognized breeds of dairy cattle. The class selection committee, however, shall give priority to selecting quality cattle in the breeds available and not be obligated to having all breeds represented in the evaluation classes. Classes will consist of heifers, young cows or mature cows.
- Class or classes may contain production/pedigree data as part of the evaluation process.
- Participants will be permitted to view the animals from all angles but will not be permitted to handle them.
- The dairy cattle handlers will wear numbers that identify the animals.
- Each class is worth 50 points maximum for a correct placing.
- Participants will have 15 minutes to place each class. For classes on which oral reasons will be given, participants will be given 15 minutes.

Oral Reasons

- Oral reasons will be required on two classes. These two classes will be designated by the event superintendent prior to the actual evaluation of the class.
- Oral reasons will be given in another location immediately following the evaluation classes.
- Participants may not use notes during delivery of reasons. Points will be deducted for the use of notes.
- Each class is worth 50 points maximum for each set of reasons.

Event Scoring

Activities	Individual Points	Team Points
Written Exam (50 problems @ 3 points each)	150	450
Placing Classes (6 classes @ 50 points each)	300	900
Reasons Classes (2 classes @ 50 points each)	100	300
Evaluation/Pedigree/ Performance Class	50	150
Questions Class	50	150
MAXIMUM POINTS	650	1,950

Tie Breakers

Individual

- Oral reasons score
- General knowledge exam score
- Evaluation score

Overall Team

- Total oral reasons score
- Total general knowledge exam score
- Total evaluation score

Dairy Cattle Handlers

Purpose

The purpose of the Dairy Cattle Handlers Activity is to recognize the contributions of the handlers in presenting each animal to its best advantage.

Event Rules

- It is highly recommended that participants wear dairy whites.
- This event is held in conjunction at the Dairy Extravaganza. The state winner will be the highest placing FFA member in the showmanship event at the Dairy Extravaganza. This student will then be eligible to participate in the National Dairy Cattle Handlers Event.

Suggested Event Scoring

Activities	Individual Points
Appearance of the handler	10
Control of animal(s) by the handler	
Setting up the assigned animal to its best advantage	15
Maintaining the animal in its most advantageous pose	15
Effectively restraining while avoiding exciting the assigned animal	15
Moving the animal as requested by the ringmaster	15
Poise and calmness of the handler	20
Display a cooperative, courteous, helpful and positive attitude	10
MAXIMUM POINTS	100

Employment Skills

****This contest will switch to an LDE Summer of 2023***

Purpose

The Employment Skills Leadership Development Event is designed for FFA members to develop, practice and demonstrate skills needed for seeking employment in the industry of agriculture. Each part of the event simulates, as closely as possible, real-world activities that are used by real-world employers.

Objectives

Through participation in this event, participants will be able to:

- Gain a clear understanding of their personal career interests and opportunities.
- Develop, practice, and demonstrate skills needed in seeking employment in the agriculture industry.
- Enhance their writing and interviewing skills.
- Gain real-world experience

Event Rules

- The FFA Employment Skills Career Development Event will be limited to **one participant per school**.
- The FFA Employment Skills Career Development Event will be for students who are regularly enrolled in agricultural education during the calendar year, have a planned course of study, or who are still in high school, but have completed all the agricultural education offered. When selected, participants must be active members of chartered FFA chapter and the National FFA Organization.
- Participants should be in official FFA dress.
- Each participant's cover letter, resume, and application will be the result of his/her own efforts.

- Participants shall be ranked in numerical order on the basis of their score in interview, technical and overall points. The judge's ranking of each participant then shall be added, and the winner will be that participant whose total ranking is the lowest.
- All items (application, cover letter and resume) must be submitted by the official due date.
 - A point deduction will occur for late materials.
- All contestants will have their application, cover letter, and resume screened.
- The top 10 individuals from the screened materials will be invited to campus for face-to-face interviews.
- All remaining participants are invited to attend an employment professional development workshop during state FFA CDEs on campus.

Event Format

- Equipment
 - Students must provide their own writing utensils (black or blue pen recommended).
- Activities
 - The event is developed to help participants in their current job search (for SAE projects, part-time and full-time employment). Therefore, the cover letter, resume and references submitted by the participant must reflect their current skills and abilities and must be targeted to one of the three job descriptions that they are applying for. In other words, participants cannot develop a fictitious resume for a fictitious job. Instead, they are expected to target the resume towards a real job that they qualify for.
 - The student will apply for one of five position descriptions announced and posted around the middle of February.

Items to be Submitted Prior to Event

- The participant **must upload** documents to Judging Card in either Microsoft Word or Adobe PDF format. Each upload contains a cover letter, resume and reference page, not to exceed four total pages

- Cover Letter
 - In addition to the cover letter being a formal cover letter, it must also identify the position in which they are applying for. The letter is to be one page, left justified and typed with 12 pt. Font.
 - Letter is to be addressed to: Employment Skills Superintendent, Career Development Events, Colorado State University, Ft. Collins, CO 80523-1101
 - Please note: There is a different address to be used for the National CDE.
- Resume
 - The resume is to be single-sided only, typed not to exceed two pages total. Suggested formats can be found in the Greggs Manual or on the [CSU Career Center website](#).
 - Resume must be non-fictitious and based upon the participant's actual work history.
 - Make resume relevant to job focusing on skills learned, including all relevant experiences and involvements.
- Employment Application
 - Participant will complete and submit a standard on-line job application by the due date.

Items to be completed at the Event

- Personal Interview
 - The personal interview will consist of an interview in front of a panel of judges. Each interview will last approximately twenty minutes.
- Follow-Up Letter
 - Thirty minutes will be given.
 - Participant will submit a follow up letter after the interview. Participant will be provided a computer with Office XP – Microsoft Word 2007 to compose and type a follow up letter. A printer will also be furnished. Follow-up letters should be written in direct response to the interview and should not be pre-written. The letter is to be addressed to the Job Interview Superintendent as in the cover letter.

- Networking Activity
 - Participants will be given a networking scenario in which they will be expected to formulate a two to three minute extemporaneous response to one or more judges. Scenarios may include, but are not limited to meal function, a mixer, career show, an elevator pitch, etc.

Event Scoring

Activities	Individual Points
Application	100
Cover Letter	100
Resume & Reference Page	200
Personal Interview	500
Networking	100
Follow Up Letter	50
MAXIMUM POINTS	1,050

Tie Breaker

- Personal Interview
- Resume
- Networking

References

The list of references is not intended to be 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.

- [CSU Ag Education](#)

- Greggs Manual, Elements of Style-Struck and White, Microsoft Word resume templates
- 101 Toughest Interview Questions...and Answers That Win Jobs, Daniel Porto, Daniel Porto/Paperback/Published 1999
- 25 Reasons Why I Won't Hire You! What You Did Wrong Before, During & After the Interview! Zenia Glass/Paperback/Published 1998 • Best Answers to the 201 Most Frequently Asked Interview Questions, Matthew J. DeLuca, Matthew J. DeLuca/Paperback/Published 1996 • The Complete Employment Skills Handbook, John J.Marcus/Paperback/Published 1994

Farm and Agribusiness Management

Purpose

The Farm and Agribusiness Management Career Development Event provides competition that fosters information assimilation, critical thinking and problem-solving skills necessary for successful business management. The skills learned in this event can be used to successfully manage a farm, agribusiness, pursue agricultural business careers and can be applied to personal financial management. The Farm and Agribusiness Management Career Development Event enhances and encourages opportunities for all participants to receive instruction that develops business management and entrepreneurial skills.

Objectives

Participants will demonstrate their ability to:

- Analyze business management information.
- Apply economic principles and concepts of business management to the decision-making process.
- Evaluate business management decisions.
- Work together cooperatively as a team.

Event Rules

- Each team will consist of four members; however less than four members can participate.
- Only calculators that are furnished by Colorado State University can be used for the event.
- Please contact the Event Superintendent for copies of old exams and/or to answer any questions with regard to the Farm Business Management event.

Event Format

Written Exam

- The written exam of the Farm Business Management event is designed to exam team members' understanding of economic principles in farm management.
- Team members work as individuals and each will complete the written exam.
- There will be 50 multiple-choice questions with 60 minutes allowed for completion of this section of the event.
- Multiple choice questions, some related to problem situations, form the basis for testing this understanding. In general, questions are designed for the understanding of the application rather than definition identification.

Problem Solving Analysis

- Team members work as individuals and complete all problems assigned.
- 150 are allowed or completion of this section.
- The problem solving analysis portion of the Farm Business Management event is designed to determine the team members' ability to apply principles of farm business management to decision making process by actual problem analysis and to justify the decisions made.

Event Scoring

Activities	Individual Points	Team Points
Written Exam (50 questions @ 2 points each)	100	300
Problem Solving Analysis (40 questions @ 5 points)	200	600
MAXIMUM POINTS	300	900

Tie Breaker

- Written Exam
- Problem Solving

References

- Bulletin No. 4, **NATIONAL FFA CONTESTS** 1991-93
- **DOANE'S FARM MANAGEMENT GUIDE**, 1985. Doan Publishing, 1701 Borman Drive, St. Louis, MO
- Jobs & Steward, 1987. **FARM & RANCH BUSINESS MANAGEMENT**, Deere & Company, Moline, IL
- **SOURCE UNIT IN AGRICULTURAL MANAGEMENT** 1987. CCOES-CSU, Ft. Collins, CO
- **SOURCE UNIT IN AGRICULTURAL FINANCE** 1986. CCOES-CSU, Ft. Collins, CO
- **SOURCE UNIT IN AGRICULTURAL MARKETING**, 1986, CCOES-CSU, Ft. Collins Kay, R.D. and W.M. Edwards, Farm Management, McGraw Hill, Inc.

Field Crops

Purpose

The purpose of the Field Crops Career Development Event is to create interest and promote understanding in agronomy by providing opportunities for recognition through the demonstration of skills and proficiencies. It also gives students an opportunity to explore and pursue career opportunities available in agronomy.

Objectives

Through participation in this event, participants will be able to:

- Demonstrate knowledge and skills used in agronomic sciences.
- Explore career opportunities, skills, and proficiencies in the agronomy industry.
- Determine the ability to identify agronomic: Crops, Weeds, Seeds, Insects, Diseases, Plant nutrient deficiencies, Plant disorders, and Seed Analysis
- Evaluate a problem and determine appropriate management responses.
- Demonstrate understanding of sustainable agriculture and environmental stewardship through the use of integrated pest management and best management practices.

Event Rules

Field Crops Team

- A field crop team consists of four (4) individuals. The top three scores will be counted toward the team score. Awards will be given based on individual and team accomplishments.

Instructions to Students

- Team members shall report to the Superintendent to receive detailed instructions. Participants may bring a magnifying glass, and forceps. Each participant MUST have a No.2 pencil. CSU will furnish calculators. No other materials are allowed.

Event Format

Procedure for Event

- Students will be allowed 45 minutes for each phase of event.

Quality of Samples

- The quality of the samples will be governed by the quality of materials available for preparation.

Review of Event

- If possible, a review of the event will be held. Time and place for the review will be announced.

Seed Analysis – Total Time: 45 minutes

- There will be four (4) samples of seed for analysis on the basis of seed purity. These four samples are to be chosen from the following groups:
 - Wheat
 - Barley
 - Oats
 - Alfalfa
 - Sweetclover
 - Crested Wheatgrass
 - Bromegrass
- The seed quantities before the addition of impurities shall be 30 grams for small grain and 10 grams for alfalfa, clover, crested wheatgrass and bromegrass.
- The participant must classify and name, according to common names, all seeds mixed with the base sample. The classification shall be:
 - Other crops
 - Prohibited noxious weeds
 - Restricted noxious weeds
 - Other common weeds
- No less than three seeds of another crop or five seeds of any weed will be added to a sample. Additions will be limited to items on the list of identification materials for the field crops event. No limits on additions.

- Like or similar crops such as wheat in wheat, oats in oats, barley in barely or sweet clover in alfalfa, shat not be used as additions to a sample. If wheat is used as an add-mixture, it need only be identified as “wheat”.
- A seed analysis form will be available for the student to use and evaluate each sample. This form will not be scored. However, ten multiple choice questions will be asked about each of the four seed analysis samples and scored. It is possible that a pure sample may be included for seed analysis.

Written Exam and Problem Solving – Total Time: 45 minutes

- Written exam– 30 minutes
 - Fifty multiple choice questions will be selected from a pool of questions provided by Agricultural Education teachers. These questions will reflect common crop production problems and/or practices encountered in the major crops of Colorado. Where necessary to visualize the question for the participant, pictures, models, plant samples, or slides will be displayed.
 - Insects covered in “The Pesticide User’s Guide” are suggested as possible ways in which slides could be employed. Corn, small grain, alfalfa, bean, potato or sugar beet insects considered as major pests may be used in this section.
 - Participant answers will be recorded on machine-scored sheets; therefore, each participant must have a number 2 pencil.
- Problem Solving – 15 minutes
 - The ten problems will be chosen from a pool of problems provided by the Agricultural Education teachers. As in the previous section, participants will respond with their answers on machine-graded forms.
 - Problems will be developed around the production practices of the major crops in Colorado. Hand-held calculators may be a valuable tool but will not be provided by the event superintendent.

Insect Identification and Pesticides – 45 minutes

- Insect Identification – 25 minutes

- Each participant will identify 20 insects. The participant will have 60 seconds to identify each insect.
- Insects will be identified by common name. The insect may be in adult or larvae/nymph form.
- The list of common insect pests that will be included in the event are as follows (A=Adult Stage & B=Adult or Larvae/Nymph Stage):
 - Alfalfa weevil (B)
 - Grasshopper
 - Redlegged (A)
 - 2-striped (A)
 - Migratory (A)
 - Differential (A)
 - Pea aphid (B)
 - Western corn rootworm (A)
 - European corn borer (A)
 - Banks grass mite (B)
 - Western bean cutworm (B)
 - Army cutworm (B)
 - Sunflower head moth (A)
 - Banded sunflower head moth (A)
 - Greenbugs (A)
 - Colorado potato beetle (B)
 - Codling moth (B)
 - Potato psyllid (A)
 - Russian wheat aphid (A)
 - White grub (B)
 - Thrips (A)
- Stored Grain Insects
 - Indian meal moth (A)
 - Saw-toothed grain beetle (A)
 - Lesser grain borer (A)
 - Flour beetle (A)
- Beneficial Insects
 - Green lacewing (A)
 - 7-spotted lady beetle (A)

- Convergent lady beetle (A)
- Ground beetle (A)
- Flower fly (A)
- Lady beetle (B)
- Pesticides – 20 minutes
 - Each participant will be given 20 minutes to complete the pesticide application/safety section of this event.
 - The pesticide application section will include 25 questions dealing with general pesticide information and 15 questions concerning the understanding of a pesticide label. All information included in a product label may be used.
 - Safety in the application and use of pesticides will be included in this section. Personal safety, as well as environmental safety, will be included.
 - Problems dealing with calibration and use of pesticides will be included.

Identification of Crops and Weeds – Total Time: 45 minutes

***List will be reviewed by CDE/LDE Committee in Summer of 2022**

- The identification phase of the field crops will comprise of a total of 120 samples to identify on which a total of 600 points may be scored. A time limit of 45 minutes will be allowed for this part of the event. The event will be broken down into the identification of grain crops, forage crops, other crops and weeds. Seeds, head (or ears) may or may not be included on any specimen. Green growing plants may be used for some of the samples.
 - Fifteen species are listed for the seedling identification portion of this event. Eight of the 15 will be displayed as either pictures or live seedlings. These eight species will be judged and scores recorded as a separate part of the identification portion of the event.

Event Scoring

Activities	Individual Points	Team Points
Written Exam (50 questions @ 4 points each)	200	600
Problem Solving (10 problems @ 1 point each)	100	300
Seed Analysis (4 samples @ 100 points each)	400	1200
Insect Identification (20 samples @ 5 points each)	100	300
Pesticides (15 questions @ 5 points each)	75	225
Identification of Crops and Weeds (120 samples @ 5 points each)	600	1,800
MAXIMUM POINTS	1,475	4,425

Tie Breakers

- Exam
- Seed Analysis
- Identification

References

Pesticides

- Private Applicators Training Manual
- US Environmental Protection Agency – Region VIII
- 1985 Product Guide, Agricultural Chemicals. COOP
- 1991 Pesticide Guide – Field Crops
- 1991 Pesticide Guide – Commercial and Vegetable crops
- 1991 Tree Fruit Pest and Crop Management Guide
- Plant an seed samples may be ordered from the Agronomy Club of the CSU Soil and Crop Sciences Department

- Seedling identification photographs may be ordered from the CSU Bioagricultural Sciences and Pest Management Department

List of Identification Materials – Crops Event

Key:

- (e) = plant or head or seed or both
- (p) = plant, head or ears
- (s) = seed only
- (b) = both plant or head and seed

Grain Crops	Forage Crops
Spring wheat (b)	Alfalfa (e)
Winter wheat (b)	Red clover (e)
White wheat (b)	Alsike clover (e)
Rye (e)	White clover (e)
Oats (e)	Sweetclover (e)
Two-rowed barley (e)	Strawberry clover (e)
Six-rowed barley (e)	Sundangrass (e)
Dent corn (e)	Timothy (e)
Popcorn (e)	Kentucky bluegrass (e)
Sweetcorn (e)	Crested wheatgrass (e)
Proso millet (e)	Intermediate wheatgrass (p,b)
Foxtail millet (e)	Western wheatgrass (b)
Grain sorghum (e)	Buffalograss (e)
Fieldpeas (e)	Blue grama (p)
Great northern fieldbean (s)	Smooth brome grass (e)
Pinto fieldbean (s)	Orchardgrass (e)
Flax (s)	Tall fescue (e)

Sugarbeet (s)	Perennial rye-grass (e)
Safflower (e)	Reed canary-grass (e)
Castor (s)	Redtop (e)
Soybean (e)	Big bluestem (p)
Triticale (e)	Little bluestem (p)
	Russian wildrye (e)
	Side-oats grama (e)
	Canada wildrye (e)

Weeds and Weed Seeds Identification

- Prohibited Noxious Weeds
 - Leafy spurge (e)
 - Russian knapweed spotted and/or diffuse (e)
 - Field bindweed (e)
 - Canada thistle (e)
 - Whitetop (e)
 - Woollyleaf bursage (poverty weed) (p)
 - skeletonleaf bursage (silverleaf poverty weed) (p)
 - Johnsongrass (e)
 - jointed goatgrass (e)
 - musk thistle (e)
 - perennial sowthistle (e)
 - Saint Johnswort (e)
 - perennial pepperweed (e)
- Restricted Noxious Weeds
 - wild oats (e)
 - puncture vine (e)
 - curly dock (e)
 - poverty sumpweed (p)
 - dodder (e)
- Common Weeds

- common sunflower (e)
- green foxtail (e)
- yellow foxtail (e)
- Russian thistle (e)
- redroot pigweed (e)
- lambsquarters (e)
- foxtail barley (e)
- prickly lettuce (e)
- sandbur (e)
- wild buckwheat (e)
- downy brome (e)
- barnyardgrass (e)
- buffalo bur (e)
- kochia (e)
- common mallow (e)
- Shepherdspurse (e)
- Crabgrass (e)
- Cocklebur (e)
- poison milkweed (p)
- low larkspur (p)
- tall larkspur (p)
- white locoweed (p)
- chicory (p)
- tansy mustard (p)
- flix-weed (mustard) (p)
- field pennycress (fanweed) (e)
- yellow toadflax (e)
- dalmatian toadflax (e)
- wild proso millet (e)
- burdock (e)
- marshelder (p)
- mullen (p)

Floriculture

Purpose

The Floriculture Career Development Event is designed to create an interest in career preparation for all current and future aspects of the floriculture industry through leadership development and hands on technical skill development using industry standards that are delivered through the agricultural education curriculum.

Objectives

- Identify plants, 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.
- Identify and recommend solutions for plant disorders.
- Demonstrate the use of elements and principles of design and develop related skills.
- Evaluate marketable floral products for quality and cultural perfection for use in the retail floral industry.
- Identify, select, operate and maintain appropriate supplies and equipment for floriculture production, design and marketing.
- Demonstrate the use of safety procedures and practices in floriculture operations.
- Understand the operation, management and maintenance of facilities for floriculture operations.
- Demonstrate interpersonal skills necessary for successful employment in the floriculture industry.
- Demonstrate proper sales and customer service skills.
- Demonstrate general business practices appropriate to the floriculture industry.
- Effectively work together as a team.

Event Rules

- All general rules for the Colorado FFA Career Development Events apply to this event.
- The event supervisors have the authority to disqualify any participants (not the school) caught cheating or guilty of any other inappropriate conduct. It is the duty of the event supervisors to enforce all rules. At the discretion of the event supervisors, participants may be split into groups with only one member from a school in each group.
- Team will consist of up to four members with three members' scores counting toward total team score.
- Students must compete in this event to compete in the National Career Development Event.

Event Format

- Content for this event will be based on student outcomes for floriculture and greenhouse management found in the [Colorado AFNR content standards](#).
- Each participant will be provided with a single score scan sheet. This scan sheet will be used for all phases of the event. In the event of its loss, that participant will be disqualified. Each team shall use their official Colorado FFA Chapter Number for their team number.
- The general guidelines for this event have been developed from the [National Career Development Events Handbook](#).

Identification of Plant Materials

- Fifty specimens from the Floriculture Plant Identification List will be displayed for participants to identify by technical and common names.
- A number will designate each specimen. Four points will be awarded for each specimen that is correctly identified.
- Each participant is allowed 50 minutes to complete this event, or one minute per specimen.
- No specimen may be touched or handled in any way.

General Knowledge Examination

- Fifty objective-type questions will be selected from the bank of

questions.

- The questions will be taken equally from the Floral Designing and Greenhouse Study Packets.
- 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 this event.

Practicum

- Floral Design
 - Make a \$35 floral arrangement (The \$35 cost will include both labor and tax and be within fifty cents either way of the \$35) using the materials provided.
 - The event superintendent will announce the type of arrangement during the team orientation meeting.
 - Participants will be allowed 40 minutes to complete their arrangement and itemized bills.
 - The event 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.
 - Judges will be professional designers from the local community.
 - Scoring criteria are presented on the floral arrangement practicum scorecard which will be recorded by a judge.
 - Explanation of Floral Arrangement Terms:
 - Design: Category Interpretation: Design follows objective/scenario given
 - Balance: Physical and visual
 - Creativity: Artistic inventiveness
 - Depth: Placement of materials at different levels throughout the arrangement
 - Focal Emphasis: Design has one area of design that attracts the eye to it.
 - Line: Movement
 - Mechanics: Professional techniques and application
 - Scale: Proportion
 - Unity: Cohesiveness of design

- Identifying and Controlling Plant Disorders
 - Pest and disorder items may be presented as an intact specimen, photograph or preserved specimen (herbarium sheet, insect mount, etc.) Each specimen will be designated by a station number. The participant must identify the item and its classification (nutritional/environmental, insect/pest, or disease). The participant then must determine the damage location as well as chemical and culture controls for the disorder. Each participant will identify 15 specimens total for this event.
 - No specimens or items may be touched or handled in any way. 20 minutes will be allowed for this event. Refer to the Disorder Practicum Scorecard for additional details.
 - The plant disorders will come from the following list of disorders.
 - Nutritional and Environmental Disorders
 - Cold temperature (freeze)
 - Coldwater damage
 - Ethylene damage
 - Insufficient water damage
 - Iron deficiency
 - Nitrogen deficiency
 - Phosphorus deficiency
 - Diseases
 - Botrytis-Gray mold
 - Damping-off
 - Downy mildew
 - Leaf spot (Black)
 - Powdery mildew
 - Root rot
 - Rust
 - Stem rot
 - Tospovirus (INSV and TSWV)
 - Insects and Pests
 - Aphids
 - Fungus gnats
 - Leaf miner
 - Leafhopper

- Mealybugs
- Scale
- Shore flies
- Snails/Slugs
- Spider mites
- Thrips
- Whiteflies
- Identification of Growing Equipment and Procedures
 - 15 items of equipment (or pictures) will be displayed for participants to identify from the provided equipment list.

Event Scoring

Activities	Individual Points	Team Points
Written Exam (50 questions @ 2 points each)	100	300
Identification of Plant Materials (50 specimens @ 4 points each)	200	600
Practicum (205 Individual Points and 615 Team Points)		
Floral Arrangement	100	300
Identifying Plant Disorders (25 items @ 3 points each)	75	225
Identification of Growing Equipment & Procedures (15 items @ 2 points each)	30	90
MAXIMUM POINTS	505	1,515

Tie Breakers

- Written Exam
- Plant and Equipment Identification
- Floral Arrangement Practicum

References

The plant identification list, equipment and supply identification list and rubrics can be found on the National FFA CDE webpage and on Colorado Ag Ed Moodle.

Food Science and Technology

Purpose

The Food Science and Technology career development event is designed to promote learning activities in Food Science and Technology related to the food industry and to assist students in developing practical knowledge of principles used in a team decision-making process.

Objectives

The food science and technology career development event provides the opportunity for the participant to

- Gain an awareness of career and professional opportunities in the field of food science and technology.
- Experience individual participation, group scoring and leadership responsibilities in a competitive food science and technology program.
- Develop technical competence and personal initiative in a food science and technology occupation.

Event Rule

- Teams will consist of up to four members. The team ranking is determined by combining the top three members' scores for the team score.
- All general rules for the Colorado FFA Career Development Events apply to this event
- Official FFA Dress is required for this event.
- Each participant must provide; a clipboard that is clean and free of notes, two sharpened No. 2 pencils and an electronic calculator — Calculators used in this event must be non-programmable and non-graphing. Calculators should have only basic functions such as addition, subtraction, multiplication, division, equals, percent, square root, +/- key. No other calculators can be used during the event including cell phones.
- Any participant in possession of an electronic device in the event is subject to disqualification.

Allergy Information: Food products used in this event may contain or come in contact with potential allergens. Any participant in need of reasonable accommodations for their participation in the Food Science and Technology CDE should complete the online Reasonable Special Needs Request Form upload during registration. Questions may be directed to the State FFA Advisor or the CSU CDE contest coordinator.

Event Format

The event is composed of four parts that are each completed individually. The four individual scores of the written exam, problem solving/math practicum, food safety and quality practicum, and the sensory evaluation practicum will all be comprised together to create the team score

Written Exam

- The objective questions administered during the food science and technology examination will be designed to determine each team member's understanding of the basic principles of food science and technology. The exam will be created using the textbooks and websites specified in the reference section.
- Team members will work individually to answer each of the 50 questions. Each person will have 60 minutes to complete the examination. Each question will be worth three points, for a total of 150 points.

Problem Solving/Math Practicum

- Participants will answer a series of five mathematical calculations based on common food science themes. Questions may include nutrition calculations, ingredient quantity, cost benefit analysis, estimation of cost/margin of goods sold, conversions, processing conditions, etc.
- Example Question: The perfect glass of sweet tea is 20 percent sugar. Jim is making a one-gallon container of sweet tea. How many cups of sugar should he add?
 - a. 2.4 cups
 - b. 3.2 cups
 - c. 3.4 cups
 - d. 4 cups

Food Safety and Quality Practicums

Customer Inquiry

- Each participant will be given five scenarios representing general consumer inquiries. Participants must determine if the consumer inquiry reflects a quality or safety issue (two points per scenario) and determine if it is a biological, chemical or physical concern or hazard (three points per scenario).

Product Specification Compliance

- Students will be given sample sets (actual products and/or data sets) and will be responsible for determining compliance with the provided specification requirements. This may include, but is not limited to, determining if the products are within the net weight standards, product sizing requirements, pH, color analysis, viscosity measurement, fill level tolerances, packaging specification compliance, etc. Participants will be asked five questions regarding potential compliance violations presented within the sample set.

Sensory Evaluation Practicums

Triangle Tests

- Four different triangle tests will be conducted. Participants are expected to identify the different samples through flavor, aroma, visual cues and/or textural differences. Answers will be given on the sheet provided. No list will be provided for this segment of the practicum. Each test is worth five points.

Aromas

- Each participant will be asked to identify four different aromas from vials provided at each station and record the answer on the sheet provided. A list of potential aromas will be provided to each person. Each sample is worth 5 points.

- | | | |
|---------------|----------------------|---------------------|
| 10. Apple | 21. Ginger | 32. Peach |
| 11. Banana | 22. Grape | 33. Peppermint |
| 12. Basil | 23. Lemon | 34. Raspberry |
| 13. Butter | 24. Licorice (anise) | 35. Sage |
| 14. Cherry | 25. Lime | 36. Smoke(liquid) |
| 15. Chocolate | 26. Maple | 37. Strawberry test |
| 16. Cinnamon | 27. Molasses | 38. Vanilla |
| 17. Clove | 28. Nutmeg | 39. Watermelon |
| 18. Coconut | 29. Onion | 40. Wintergreen |
| 19. Coffee | 30. Orange | |
| 20. Garlic | 31. Oregano | |

Event Scoring

Activities	Individual Points	Team Points
Written Exam (50 questions @ 3 points each)	150	450
Math/Problem solving (5 questions @ 5 points each)	25	75
Food Safety and Quality Practicum (50 Individual Points and 150 Team Points)		
Customer Inquiry (5 scenarios @ 5 points each)	25	75
Product Specification Compliance (5 questions @ 5 points each)	25	75
Sensory Evaluation Practicum (40 Individual Points and 120 Team Points)		
Triangle Test (4 triangle tests @ 5 points each)	20	60
Aromas (4 samples @ 5 points each)	20	60
MAXIMUM POINTS	265	795

Tiebreakers

In the event of a tie, the following events will be used in order to determine award recipients:

1. Written Exam
2. Food safety and quality
3. Sensory Evaluation

Horse Evaluation

Purpose

The purpose of the Horse Evaluation Career Development Event is to:

- Promote the study of and interest in equine science, selection, care and well-being, management and production through the agricultural education curriculum.
- Encourage experiential learning through use of practical skills, critical thinking and applied knowledge.
- Provide recognition for those who have demonstrated skills and competencies as a result of instruction in equine science.

Objectives

By incorporating horse evaluation instruction in the agricultural education program, teachers can instill leadership and motivate learning in the classroom through development of student skills in cooperative learning, observation, analysis, critical thinking and communication. Through participation in the national event, participants will be able to:

- Develop and exercise competitive spirit in a team atmosphere.
- Create a foundation for career choices by building an awareness of opportunities within the equine industry.
- Advance knowledge in equine science, selection, care and well-being, management and production of horses.
- Evaluate, make decisions and orally justify decisions on conformation traits and performance of horses.

Event Rules

- Four students shall compose a team. No alternatives will be allowed, but a school may be represented by less than four persons. • Halter horses will be judged “as sound” and performance horses will be judged “as is”.
- Horses will be shown at walk and trot for the halter classes. • Refer to the rules for the Livestock Event for more detailed discussion of operational procedures.
- There will be no talking during judging or while waiting to give reasons.

This will serve as the only warning:

- **If participants are caught talking, they will be disqualified and ask to leave. Additionally, if participants are caught with any electronic device during the event it will be confiscated and the participant will be disqualified and asked to leave. The device will be returned to the instructor in charge following the completion of the event.**
- There will be no one in the reasons room at any time except designated participants and event officials.
- The second-place horse evaluation team at the Colorado State CDEs will be offered the opportunity to compete at the American Quarter Horse Congress Judging Contest held in Columbus, Ohio where they would represent Colorado FFA. The team would be certified to compete by the Colorado State FFA Advisor.
- The third-place horse evaluation team at the Colorado State FFA CDEs will be offered the opportunity to represent Colorado FFA and compete at the Paint World horse judging contest in Ft. Worth, Texas. The team would be certified to compete by the Colorado State FFA Advisor.

Event Format

Written Exam & Identification

- 25 questions based on AFNR content standards
- Participants will identify breeds and/or colors and markings of horses, tack and equipment as well as leg deviations (i.e., toed out, toed in, sickle hocked etc...) items. Each problem will be worth two points each, 25 items total.

Horse Classes

- Six classes of light horses will be placed
 - Four individuals will constitute a class. Classes may be mares, stallions or geldings. Breeds of horse may consist of all breeds found in Colorado, but predominately Quarter Horse, Paint and Arabian.
 - Performance or class or classes will be judged. All tack and attire will be considered legal. Classes will be placed in accordance with

the rules of the American Quarter Horse Association or the respective breed association rules.

- Oral reasons will be given on one class.
- Questions will be asked on one additional class
- Classes chosen for reasons and questions shall be:
 - 1 halter class announced at the start of the event
 - 1 performance class announced after the class has shown

Conduct of Classes

- Two or three (2 or 3) halter classes will be judged at the same time. ○
Fifteen (15) minutes will be allowed on all non-reasons classes and 17 minutes on reasons classes.
 - Two (2) minutes – horses head to tail facing left – side view
 - Two (2) minutes – front view – horses facing participants
 - Two (2) minutes – rear view – horses facing away from participants
 - Two (2) minutes – close inspection – no handling
 - Two (2) minutes – horses head to tail facing right
 - Two (2) minutes – final placing – fill out cards – Reasons class – notes
 - Horses will also be seen at the walk and trot
- Two or three (2 or 3) groups of participants judge each class at the same time.

Oral Reasons/Questions

- There will be at least one but no more than two classes designated for oral reasons.
- There may be a class designated for questions.

Event Scoring

Activities	Individual Points	Team Points
Written Exam and Identification (50 questions/items @ 2 points each)	100	300
Placing Classes (6 classes @ 50 points each)	300	900
Reasons/Questions (2 Classes @ 50 points each)	100	300
MAXIMUM POINTS	500	1,500

Tie Breaker

- Reasons/Questions
- Test
- Performance Placings

Land Evaluation

Purpose

The purpose of the Land Evaluation Career Development Event is to promote practical knowledge in soils characteristics, suitability while understanding appropriate land use and effective land management.

Objectives

- Evaluate soil for agronomic use
- Characterize soil and site properties that are important to agricultural production
- Recognize problems affecting land uses
- Identify conservation and fertilizer recommendations
- Determine limitations for a use as a homesite
- Demonstrate use of a soil survey

Event Rules

- Each school may field a team of up to four members. Each team member participates in all three event exercises.
- The top three individual scores will be used to determine team scores.
- The contest superintendent will provide specific instructions/information pertaining to the individual exercises, a measuring tape in-place in both soil pits and Munsell color books.
- The student will provide their personal copy of "Land Judging in Colorado (revised 2017)", pencils, clipboard, water for soil texturing, soil knife (or other suitable instrument), slope finder (instructions for constructing slope finders are on page 37 of the manual), and calculator (if so desired for the soil survey exercise).

Event Format

- The Colorado State Land Judging Event consists of three parts:
 - Soil characterization and agricultural interpretations
 - Homesite evaluation
 - Soil survey exercises
- All parts of the Land Judging Event will be held in the field; therefore,

students should dress appropriately and prepare for inclement weather and the possibility of sitting on the ground for the soil survey exercise.

- Scantron sheets will be used for each exercise. Each exercise will be reviewed in the field after the scantron sheets are collected and prior to proceeding to the next exercise.
- Students are encouraged to ask questions during the review session.
- The time to complete each exercise will not exceed 45 minutes.

Soil Characterization and Agricultural Interpretations

- The purpose of this exercise is to describe various soil attributes important to agricultural management. This information will then be used to determine appropriate management practices for the particular soil type. Soil test values, climate and other necessary information will be provided. See pages 4 through 24 of "Land Judging in Colorado (revised 2017)".

Homesite Evaluation

- The purpose of this exercise is to describe various soil attributes used to determine the suitability of the soil as a family dwelling site. The scantron sheet indicates the degree of limitation assigned to each soil attribute. The student is asked to make the final evaluation for the site given the limitations of the various attributes. Water table and flooding information may be given if not obvious at the site. See pages 25 through 31 of "Land Judging in Colorado (revised 2017)".

Soil Survey

- The purpose of this exercise is to give the student experience in using a soil survey. Students will be using the Web Soil Survey, which has been the official source for soil survey information since 2006. In addition, the test will not use the old scantron but instead be a hand graded test. Examples of the new test are included the Soil Survey section of "Land Judging in Colorado (revised 2017)".

Event Scoring

Activities	Individual Points	Team Points
Soil Characterization and Ag Interpretations	116	348
Homesite evaluation	100	300
Soil Survey	97	291
MAXIMUM POINTS	313	939

Tie Breakers

- Soil Characterization
- Homesite Evaluation
- Soil Survey

Livestock Evaluation

Purpose

The livestock evaluation career development event provides the opportunity to learn and apply livestock industry and production priorities through evaluation and selection of beef cattle, swine, sheep and meat goats.

Objectives

Participants in the Livestock Evaluation Career Development Event will be able to:

- Make accurate observations of livestock.
- Determine the desirable traits in market and breeding livestock.
- Make logical decisions based on these observations.
- Discuss and defend their decisions for their placings.
- Understand desirable selection, production, management and marketing techniques for livestock.
- Understand and interpret the value of performance data based on industry standards.
- Select and market livestock that will satisfy consumer demands and provide increased economic returns to producers while meeting the needs of the industry.
- Proficiently communicate using the terminology of the industry and the consumer.
- Associate with professionals in the industry.
- Utilize current technology as it relates to the livestock industry.
- Develop employability skills for future agricultural career choices.

Event Rules

- No school shall be represented by more than four persons, which number shall constitute a team; however, a school may be represented by less than four individuals.
- Four animals shall constitute a placing class. Livestock will be identified by appropriate marking devices and shall be numbered 1, 2, 3, and 4. If animals are held or placed in a rack, the animals will be numbered 1 through 4 from left to right, when the animals are on a rear view to the contestants. If a contestant has any doubt, they are to ask the group leader.

- The participants shall be divided into groups by the Superintendent. In no group shall there be more than one participant from one school.
- Each group shall have fifteen (15) minutes to place each class. To obtain an unobstructed view of each class as a whole, each group of participants will be required to stand back from the class at least 15 feet for four minutes, except in the case of sheep when only three minutes will be allowed. Participants shall be notified three minutes before the time is up.
- Each participant shall hand in their scantron upon completion of the written exam, team activity and the placing and grading of classes. It is the contestant's responsibility to ensure their individual identification number, contestant name and all appropriate placings and scores are marked on their sheet before turning it in.
- While the event is in progress, there shall be no conferring between participants, or with anyone else. Participants having questions to ask shall consult the Superintendent or his representative.
- The classes of livestock will be selected by the Superintendent and judges. No team coach will be allowed to select classes or serve as a judge.
- The livestock herds and flocks of Colorado State University will not be available for judging work six weeks prior to the event date.
- Appropriate outerwear shall be provided by each participant in case of inclement weather.
- Please refer to the National FFA Career Development Handbook for additional information regarding this event.
- The second place livestock evaluation team at Colorado FFA State CDEs will be offered the opportunity to represent Colorado FFA and compete at the National Western Stock Show Livestock Judging Contest in Denver, Colorado. The team would be certified to compete by the Colorado State FFA Advisor.
- The third-place livestock evaluation team at Colorado FFA State CDEs will be offered the opportunity to represent Colorado FFA and compete at the American Royal Livestock Judging Contest in Kansas City, Missouri. The team would be certified to compete by the Colorado State FFA Advisor.

Event Format

- Participants shall report to the event superintendent to be assigned a number and a group. The participant shall be known by number throughout the event and shall number all cards with this number only.
- Lunch is furnished for all students entered in the Livestock Evaluation event.
- Full instructions will be given to the participants at the opening of the event.
- Duties of the Superintendent include:
 - Take charge of the participant during the event
 - Be responsible for the order in which the classes of stock shall be judged and the order in which the various groups shall judge these classes.
 - Appoint such assistants as necessary to take charge of the various groups.
 - Enforce all rules
 - Be responsible for the distribution and collection of the placing and evaluation cards.
 - Collect and compile the scores assigned by the judges for each participant.

Written Exam

- A written 100 point exam made up of 50 multiple choice questions. Contestants will have 60 minutes to complete the exam.

Team Activity

- The students will work as a team and each student will mark their Scantron cards individually.
- The team activity will consist of keep and cull set of females from beef, sheep and/or swine. Performance data based upon industry standards will be given for all keep and cull activities. Performance data that may be given includes:

○ *EPD = Expected Progeny Difference

Beef	Sheep	Swine	Goat
Birth Date	Lambing Date	Farrowing Date	Market or Breeding Doe
Birth Weight	Birth Type	Number of Pigs Born	
Birth Weight EPD*	Rearing Type	Number of Pigs Weaned	
Weaning Weight EPD*	60 Day Weight	21 Day Litter Weight	
Yearling Weight EPD*	120 Day Weight	Days to 250 Pounds	
Milk EPD*	Codon 171 Status	Adjusted Backfat	
Marbling EPD	Spider Syndrome Status	Adjusted Loin Eye Area	
Rib Eye Area EPD		Sow Productivity Index	
Back Fat EPD		Maternal Line Index	
\$ Feedlot		Terminal Sire Index	
\$ Weaning			
\$ Grid			
\$ Beef			
\$ Energy			

Placing Classes

- Seven classes of livestock will be placed. This will include at least one breeding class and one market class from each species (beef, sheep goats and swine).

Slaughter Cattle Grading Class

- One class of 5 slaughter cattle will be graded individually, according to the latest industry standards, using the official livestock scantron sheet. **These grading classes will be offered contingent upon the availability of these animals to Colorado State University. If these animals are not available, these classes will not be offered.**

Oral Reasons

- Three sets of oral reason will be given immediately following the placing of classes. Students will not be allowed to use notes during their presentation of oral reasons. The reasons classes will include at least one class from each of the three species (beef, sheep & swine). Individual awards will be presented for individual reasons scores.

Questions

- One class will be used for questions. The questions will be given prior to the students giving reasons.

Event Scoring

Activities	Individual Points	Team Points
Written Exam (50 questions @ 2 points each)	100	300
Placing Classes (7 classes @ 50 points each)	350	1,050
Reasons (3 classes @ 50 points each)	150	450
Slaughter Cattle Grading (contingent)	50	150
Questions	50	150
Team Activity	50	150
MAXIMUM POINTS	750	2,250

Tie Breaker

- Reasons
- Exam
- Placings

References

Estimating Yield and Quality Grades of Live Market Cattle

Yield Grade

USDA yield grades are used to reflect differences in cut-ability (combined yields of closely trimmed, boneless retail cuts from the round, loin, rib and chuck). The expected carcass yield corresponding to each yield grade is presented below:

USDA Yield Grade	% Cut-ability
1	>52.3%
2	50.0-52.3%
3	47.7-50.0%
4	45.4-47.7%
5	<45.4%

Steps in Determining Yield Grade:

- Estimate fat thickness over the ribeye and convert your estimate to a preliminary yield grade (PYG)

Fat Thickness	PYG
Very Lean 0.10	2.25
Lean 0.20	2.50
Lean 0.30	2.75

Fat Thickness	PYG
Average 0.40	3.00
Average 0.50	3.25
Fat 0.60	3.50
Fat 0.70	3.75
Very Fat 0.80	4.00
Very Fat 0.90	4.25

• Adjust the PYG for differences in muscling

Degree of Muscling	Adjustment (in YG units)
Very thickly muscled	<(0.60)
Thickly muscled	(-0.30)-(-0.50)
Slightly better than average	(-0.10)-(-0.20)
Average	No adjustment
Slightly worse than average	0.10-0.20
Thinly muscled	0.30-0.50
Very thinly muscled	>0.60

- Adjust for differences in % kidney, pelvic and heart (% KPH) fat. KPH fat percentage can be estimated using your estimate for fat thickness

Fat Thickness Estimate	Estimated % KPH	PYG Adjustment
0.10	1.50	-0.40
0.20	1.72	-0.35
0.30	2.00	-0.30
0.40	2.25	-0.25
0.50	2.50	-0.20
0.60	2.75	-0.15
0.70	3.00	-0.10
0.80	3.25	-0.05
0.90	3.50	No adjustment

- Combine the preliminary yield grade (PYG) and the adjustments to obtain the final yield grade.

Quality Grade

- USDA quality grades are used to reflect differences in expected eating quality among slaughter cattle and their carcasses. The quality grade of a beef carcass is determined by its maturity and marbling score. Young steers and heifers typically qualify for one of the following four quality grades:
 - Prime
 - Choice
 - Select
 - Standard

Determining Quality Grade

- Among cattle that are similar in age, genetic background, management history, and finish are good indicators of marbling score and quality grade. The following guidelines are useful for estimating marbling and quality grade in live cattle.

- Adjust these estimates for known effects of genotype, age and nutritional history.

Fat Thickness Estimate	Estimated Marbling Score	Estimated Quality Grade
0.10	Slight- or Lower	Low Select or Lower
0.20	Slight	Average Select
0.30	Slight+	High Select
0.40	Small-	Low Choice
0.50	Small	Low Choice
0.60	Small+	Low Choice
0.70	Modest-	Average Choice
0.80	Modest	Average Choice
0.90	Modest+	Average Choice

Meats Evaluation and Technology

Purpose

The Meat Evaluation and Technology career development event provides the opportunity to learn and apply industry related practices of meat science.

Objectives

The objectives of the Meats Evaluation and Technology Career Development Event are to:

- Develop employment skills for students who are interested in exploring or pursuing career opportunities in the meat animal industry.
- Assist the local agricultural education instructor in motivating students to become knowledgeable consumers of meat animal products and/or involved in the industry of meat animal marketing and merchandising.
- Develop high school students' analytical skills, critical thinking strategies and understanding of appropriate meat terminology.
- Develop high school students' abilities to evaluate meat animal products in order to optimize economic returns to producers and industry as well as to meet the needs of the consumer.

Event Rules

- Participants must come prepared to work in a cold storage facility (approximately 0°C) for approximately two hours. Each participant will be required to wear a hard hat, hair net, warm clothing and footwear and a clean white frock. Participants who arrive without these requirements will not be allowed to participate.
- Each participant must bring two sharpened No. 2 pencils, a clipboard and an electronic calculator. Calculators used in the event should be battery powered, non-programmable and silent. Participants must not bring any blank paper, notes, training aids other electronic items, purses or backpacks. Students with special needs must contact the event superintendent prior to the event.
- Participants are expected to be prompt at the stations throughout the event. No conversation will be allowed between participants during the event. Conversation among participants constitutes disqualification.

- Participants and official judges are to make their placings and identifications without handling the meat.
- Two minutes stand back time on placing classes will be utilized when possible. For beef quality classes, a walk by period will be utilized at the 1 minute mark.

Event Format

Meat Formulation Problem Solving

- Students will complete a meat formulation problem solving exercise. An example is at the end of this section. Nine questions are to be answered using the computerized scorecard. The one solution to the meat formulation problem will be worth 10 points. The other 8 questions based on the correct formulation will be valued at 5 points each. All answers to be rounded to the hundredths (2 decimal) places.

Written Exam

- Each participant will be given a written exam relating to meat storage and handling, cookery, nutrition, food safety (HACCP principles, biosecurity and personal safety), animal welfare and animal identification systems. The 30 questions worth 3 points each could include multiple choice, true/false or situation based questions. The maximum points possible on the exam are 90 points. All questions will be based on materials taken from the "Meat Science and Food Safety" DVD available through CEV Multimedia as listed on the resource material list. Identified chapters of the DVD will be publicized for the written exam.

Retail Meat Cuts Identification

- Participants will identify 30 retail meat cuts found on the "Meats Identification Card". The official key (Retail Cuts Coding) is located at the end of this chapter of the handbook. Only the cuts listed are eligible to be used in this event. Participants will be given one point for correct species identification, one point for correct primal cut identification, one point for correct cookery and three points for correct retail trade name. Answers will be recorded on a computerized scorecard.

Beef Quality and Yield Grading

- Participants will quality and yield grade four beef carcasses.
- Quality Grading
 - Using Training Aid II (located at the end of Meats Evaluation section), the student may give the carcass a maturity score and marbling score based on USDA standards and then determine the quality grade. The student should complete the section of answers for quality grading on the computerized scorecard.
 - Ten points are awarded for each correct grade. Each will be scored for the applicable adjacent grade as follows: 10, 8, 5, 0. However, in the case of "B" Maturity, Select High and Select Low will be awarded zero points
- Yield Grading
 - Using Training Aid II, students may write in the carcass weight which is given for each carcass, give the carcass a preliminary yield grade based on USDA Standards, and then adjust the preliminary yield grade using "Ribeye Area" and "% Kidney, Pelvic and Heart Fat". After completing these steps, the student may write in the final "Yield Grade". The student should complete the section of answers for yield grading on the computerized scorecard.
 - Full points will be earned for every tenth (0.10) above or below official yield grade. A two-point deduction will be made for 2/10ths to 5/10ths (0.2 to 0.5) above or below the official yield grade. A five-point deduction will be made for 6/10ths to 9/10ths (0.6 to 0.9) above or below official yield grade. Zero points will be awarded for answers one yield grade above or below the official yield grade. Official United States Department of Agriculture Yield Grades are 1.0 to 5.9. SCORING EXAMPLE: Official Yield Grade (FYG Official) = 2.2 FYG 2.1–2.3 = full points (10) FYG 1.7–2.0 or 2.4–2.7 = minus 2 points FYG 1.3–1.6 or 2.8–3.1 = minus 5 points. Zero points for any FYG a full yield grade above or below official FYG.

Placing Classes

- Six classes from the following list will be placed with selected placings completed on the computerized scorecard. All classes will consist of four exhibits per class.
 - Beef carcasses
 - Retail cuts
 - Pork carcasses
 - Wholesale/subprimal pork cuts
 - Lamb carcasses
 - Wholesale/subprimal beef cuts

Questions on Placing of Two Classes and Ten Questions

- A total of ten questions will be asked covering two separate classes.
 - Notepaper will be provided for this section. Students will not be able to use their notes when answering questions.
 - Sample Question: “Which beef carcass had the highest percentage of KPH fat?”

Event Scoring

Activities	Individual Points	Team Points
Written Exam (30 questions @ 3 points each)	90	270
Placing Classes (6 classes @ 50 points each)	300	900
Questions (10 questions from 2 classes @ 5 points each)	50	150
Meat formulation problem solving (1 solution @ 10 points and 8 follow up questions @ 5 points each)	50	150
Retail meat cuts identification (30 cuts @ 7 points each)	210	630
Beef Quality & Yield Grading (4 carcasses @ 20 points each)	80	240
MAXIMUM POINTS	780	2,340

Tie Breakers

- Identification of Retail Meat Cuts
- Questions About Classes Score
- Total Score Carcass Grading

Resources

- CEV Multimedia – 1020 SE Loop 289, Lubbock, TX 79404, (800)922-9965
- Retail Cuts Identification DVD
- Meat Science and Food Safety DVD (written exam resource)

Milk Quality and Products

Purpose

The purpose of the Milk Quality and Products Career Development Event is to promote practical learning activities in milk quality and dairy products while assisting students in developing team decision-making skills.

Objectives

- Utilize knowledge of milk quality related to, producing quality milk, cleaning and sanitizing, cooling milk, identifying diseases transmitted to consumers via milk and recognizing causes of off flavors in milk.
- Utilize knowledge of milk pricing.
- Utilize knowledge of the composition and quality characteristics of raw and pasteurized milk and milk products.

Event Rules

- Teams will consist of up to four members. The team ranking is determined by combining the scores of the top three team participants.
- Participants will report for instructions to the event superintendent at the time and place shown in the current year's team orientation packet.
- Participants are not to use strong deodorant, perfume, chewing gum or other detractors to the taste and smell senses.
- Any participant in possession of an electronic device in the event area is subject to disqualification.
- Participants are not to bring a glass of any kind to the event.
- Students will need to bring two no. 2 pencils and a clipboard. Students may wish to bring a non-programmable calculator, bottled water and/or palette cleanser, this is optional. All other supplies will be provided.

Event Format

Milk Flavor Identification and Evaluation (20 minutes)

- Ten milk samples will be scored on flavor (taste and odor) using the computerized scorecard. All samples of milk are prepared from pasteurized milk intended for table use and will score 1 to 10 (See Scoring Guide). Milk samples will be tempered to 60°F. Only those cups provided at the event may be used.
- Participants are to use whole numbers when scoring “defect intensity” of milk and to check only the most serious defect in a sample even if more than one flavor is detected. If no defect is noted, Participants should check, “No defect” and score as a ten (See Scoring Guide).
- Palette cleansers (e.g. apples or soda crackers) will be allowed for refreshing.
- Scoring Guide – Scores may range from 1 to 10. On a quality basis:
 - 10 – excellent (no defect)
 - 8 to 9 – good
 - 5 to 7 – fair
 - 2 to 4 – poor
 - 1 – unacceptable/un-salable

Example: Milk Flavor Scores

Defects	Slight	Definite	Pronounced
Acid	3	2	1
Bitter	5	3	1
Feed	9	8	5
Flat/Watery	9	8	7
Foreign	5	3	1
Garlic/Onion	5	3	1
Malty	5	3	1
Oxidized	6	4	1
Rancid	4	2	1
Salty	8	6	4

- Suggested scores are given for the three intensities of flavor. All numbers within the range may be used. Intermediate numbers may also be used: for example, a bitter sample of milk may score 4.

Product Identification-Dairy versus Non-Dairy

- Ten samples consisting of dairy and non-dairy products will be identified and assigned a milk fat content score.
- The following products may be included among the samples:
 - Dairy Products: nonfat (skim) milk (.05%), low-fat milk (1.0%), reduced-fat milk (2%), milk (3.25%), half and half (10.5%), butter (80%), sour cream (18%), flavored milk (6.05%-3.25%) light whipped cream (30%), heavy cream (36%).
 - Non-Dairy Products: Margarine, non-dairy creamer, non-dairy sour cream, non-dairy milk, non-dairy flavored beverage and non-dairy whipped topping all of these are to be categorized as non-dairy fat.

California Mastitis Test (20 minutes)

- The California Mastitis Test will be scored using even numbers from 0 to 8 inclusive. (See below for the Scoring Guide for the California Mastitis Test)
- Five samples of milk will be evaluated for abnormality, using the California Mastitis Test method.

CMT Test Score	Appearance	Participant Score	Somatic Cell Count
Negative	Mixture liquid, no precipitate	0	0
T	Slight precipitate tends to disappear with paddle movement	2	200-300,000
1	Distinct precipitate but does not gel	4	400-500,000
2	Distinct gel formation	6	1,200,000 – 1,500,000
3	Strong gel formation, which tends to adhere paddle. Forms distinct central peaks.	8	Over 5,000,000

Cheese Identification (20 minutes)

- Ten cheese samples for identification will be selected from those listed below. Cubes of the cheeses will be available for tasting.
 - Note: More than one sample of a given cheese may be used. A score of 4 points is given for each variety correctly identified. Uncolored cheeses may be used.
- In addition to identifying cheese samples, participants will classify characteristics of identified cheeses using the following matrix. Participants will have six characteristics to select based on the ten identified cheese samples. An example cheese characteristic problem can be found in the reference section of the National FFA CDE handbook.

Cheese Characteristics Matrix

Variety	Moisture % (Max)	Fat % (Min)	Pasta Filata	Brine/ surface Salted	Ripened by	Origin
Bleu	46	50	No	Yes	Mold	France
Brie	52.5	20	No	No	Bacteria & Mold	France
Cheddar	39	50	No	No	Bacteria	England
Colby	40	50	No	No	Bacteria	US
Cream	55	33	No	No	Unripened	US
Feta	60	42	No	Yes	Bacteria	Greece
Gouda	45	48	No	Yes	Bacteria	Netherlands
Gruyere	39	45	No	Yes	Bacteria	Switzerland
Havarti	54	30	No	No	Bacteria	Denmark
Monterey Jack	44	50	No	No	Bacteria	US
Mozzarella	60	45	Yes	Yes	Bacteria	Italy
Muenster	46	50	No	No	Bacteria	France
Parmesan	32	32	No	Yes	Bacteria	Italy
Processed American	40	50	No	No	Bacteria	US
Provolone	45	45	Yes	Yes	Bacteria	Italy
Queso Fresco	59	18	No	No	Unripened	Mexico
Ricotta	73	4	No	No	Unripened	Italy
Romano	34	38	No	Yes	Bacteria	Italy
Swiss	41	43	No	Yes	Bacteria	Switzerland

Written Exam (40 minutes)

- The written exam will be comprised of a total of 60 multiple choice items. The exam will be given in two parts with one part consisting of thirty (30) questions on quality milk production and a second part of thirty (30) questions on milk marketing.

Problem Solving (20 minutes)

- The problem solving test will consist of a total of 20 critical-thinking, multiple choice questions. Topics may include, but are not limited to:
 - Decisions about the quality and acceptability of milk.
 - Calculations of the value of milk and components of milk.
 - Decisions about components of milk and milk products (including processing procedures).
 - Decisions about the use of chemicals in cleaning and sanitizing operations.

Event Scoring

Activities	Individual Points	Team Points
Written Exam (60 questions @ 2 points each)	120	360
Problem Solving (20 questions @ 5 points each)	100	300
California Mastitis Test (5 samples @ 8 points each)	40	120
Milk Flavor Identification and Evaluation (10 samples @ 12 points)	120	360
Product Identification (10 samples @ 10 points each)	100	300
Cheese Identification (10 samples @ 10 points each)	100	300
MAXIMUM POINTS	580	1,740

Tiebreakers

- Milk Identification
- Cheese Identification
- Product Identification
- Problem Solving

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; [National Career Development Event Questions and Answers](#)
- Hoard's Dairyman, PO Box 801, Fort Atkinson, Wisconsin 53538. Phone (414) 563-5551. Issues used are from September of previous year to August of current year.
- Using the California Mastitis Test published by the University of Missouri-Columbia Extension Division, Columbia, Missouri 65211. (Single copy free; write for price quote for multiple copies).
- California Mastitis Test can be ordered from NASCO. Toll free 1-800-558-9595 or toll call, 1-414-563-2446. NASCO, 901 Janesville Avenue, Fort Atkinson, WI 53538.
- The Cheese Reporter (Publication Number: ISSN 0009-2142), published weekly by Cheese Reporter Publishing Co., Inc. 4210 Washington Ave., Madison, WI 53704. Phone (608) 246-8430, Fax (608) 246-8431.
- Dairy Facts – [International Dairy Foods Association](#), 1250 H Street, N.W. Suite 900, Washington, DC 20005. Phone – 202-732-4332 • [Agricultural Marketing Service](#)
- Dairy Foods: Producing the Best, Dr. Robert Marshall; Instructional Materials Laboratory, 1400 Rock Quarry Road, Q139, University of Missouri; Columbia, MO 65211
- Pasteurized Milk Ordinance – Link is broken
- [Code of Federal Regulations Title 21, Part 133 – Cheeses and Related Cheese Products](#)

Nursery/Landscape

Purpose

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

Objectives

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

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

- Records and Reports: Demonstrate the ability to prepare estimates and complete financial statements.

Event Rules

- Each chapter may enter only one team of up to four participants designated for state.
- Other students from the chapter may complete the ALCC Passport Certification on the same day.
- The Nursery/Landscape event will be a one-day event, occurring in April or May at Pickens Tech, hosted by ALCC to coincide with the ALCC Passport certification event.
- All general rules for the Colorado FFA Career Development Events apply to this event.
- The event supervisors have the authority to disqualify any participants (not the school) caught cheating or guilty of any other inappropriate conduct. It is the duty of the event supervisors to enforce all rules. At the discretion of the event supervisors, participants may be split into groups with only one member from a school in each group.
- Students must compete in this event to compete in the National Career Development Event.
- Participants must supply the following PPE:
 - Work shoes or work boots. Tennis shoes will not be permitted.
 - Approved safety glasses (ANSI Z87)
 - Gloves
 - Tape Measure
 - Calculator
 - Pencil
 - Clipboard
 - Architects or engineers scale or a ruler
 - Participants must carry all equipment with them – no toolboxes allowed. Bags are permitted.
 - Participants disregarding safety precautions, thereby endangering themselves or others will be disqualified and all earned scores will be nullified. Standards for safety are expected to be followed by participants and may also be included as content in the written examination.

- **Official FFA dress** is not required. Students should be dressed appropriately for landscaping conditions.

Event Format

The event will be composed of five parts. Everything will be individual scores. The team score will be comprised of all individual scores.

Written Exam – 200 points

- The written exam is designed to evaluate an individual's knowledge of Nursery/Landscape safety, techniques, and skills. The listed resources will be used as a basic resource for the exam. The exam will not exceed 50 questions and 30 minutes. The questions will consist of multiple choice format. Each question will be two points each.

Landscape Estimating- 100 points

- The landscape estimating portion of the event will be designed to evaluate an individual's knowledge of landscape plan reading.
- Individuals will need to provide their own scale reading tool as well as calculator and writing utensil.
- The test will consist of 20 questions based off a design supplied to students at the time of the competition. Students will have 45 minutes to complete the estimating portion.

Equipment, Pest, and Beneficial Insect Identification - 50 points

- This portion of the event will be designed to evaluate an individual's knowledge of equipment, pests, and beneficial insects in the Nursery/Landscape Industry.
- The test will consist of 30 pieces of equipment and 20 pests. It will be all matching based off of the National CDE list. Students will have 30 minutes to complete this portion. Each question will be worth one point.

Plant Material Identification - 50 points

- This portion of the event will be designed to evaluate an individual's knowledge of Colorado Plant Identification.

- The test will consist of 50 plants from the ALCC plant list. It will be all matching. Students will have 30 minutes to complete this portion.
- Each question will be worth one point.

Practicum- 250 points total

- This portion of the event will be designed to evaluate an individual's hands-on skills of four different practicum areas.
- Those areas will be plant layout, tree planting, lateral repair and head adjustment, and controller programming.
 - Plant layout (100 points) will consist of reading the provided plan, laying out plants according to design and utilizing correct scale.
 - Tree planting (50 points) will consist of student handling of tree, safety of action, determining correct planting depth and diameter, preparing roots, driving stakes, and planting trees correctly. Students will need to ensure that proper PPE is worn if necessary.
 - Lateral Repair and Head Adjustment (50 points) will consist of finding break, repairing break, and resetting four sprinkler heads according to instructions given, Students will need to ensure that proper PPE is worn including if necessary.
 - Controller programming (50 points) will consist of setting time and day, clearing out any old zone content, resetting selected program including start time, run time, and run days, and performing a zone manual start. This will also include wiring of the controller to the solenoid. Students will need to ensure that proper PPE is worn if necessary.

Written Customer Assistance- 50 points

- This portion of the event will be designed to evaluate an individual's written customer service skills.
- Students will be given an "issue" from a client, along with the information needed to solve the problem. Students must create an email in response to the customer's inquiry that addresses the issues in a professional manner.
- This portion of the contest may be completed prior to the event, TBD.

Event Scoring

Activities	Individual Points	Team Points
Written Exam (50 questions @ 2 points each)	200	600
Landscape Estimating (20 questions @ 5 points each)	100	300
Equipment, Pest, and Beneficial Insect Identification (30 equipment ID and 20 pest samples @ 1 point each)	50	150
Plant Material Identification (50 samples @ 1 pint each)	50	150
Written Customer Assistance	50	150
Practicum (250 individual points or 750 team points)		
Plant layout	100	300
Tree Planting	50	150
Lateral Repair and Head Adjustment	50	150
Controller programming	50	150
MAXIMUM POINTS	700	2,100

Tie Breaker

- Written Exam
- Plant Layout

References

- ALCC Landscape Technician Manuals
- National FFA CDE Manual

Veterinary Science

Purpose

The purpose of the veterinary science career development event is to promote college and career readiness by providing students with opportunities to develop technical knowledge and demonstrate practical skills in the field of veterinary science.

Objectives

Participants will demonstrate professional ethics, decision-making, business competency, communication and problem-solving skills. Participants will demonstrate technical competency with small and large animals in the areas of:

- Anatomy and physiology.
- Clinical procedures.
- Identification.
- Health and safety.
- Medical terminology.
- Veterinary math applications.

Event Rules

- Teams will consist of up to four members with three members' scores counting toward total team score.
- Dress Code
 - All participants must wear scrubs or polos and slacks. All participants must wear closed toe, closed heel and flat shoes (no clogs, sandals or flip flops). No jewelry may be worn including: rings, bracelets, earrings and exposed body piercing. Wristwatches are permitted.
- Tools and Equipment
 - Students must provide pencils and clipboards.
 - Calculators and paper will be provided.
 - Colorado FFA will provide the specific tools and equipment needed to complete the practicums. For sanitation reasons, there may be materials that individuals must provide. That materials list will be available April 15th, if there are any materials.

- Any participant in possession of an electronic device in the event area is subject to disqualification.

Event Format

Written Exam

- The objective exam is designed to determine team members' broad understanding of the veterinary science field. The written exam will consist of 50 questions. See sample questions below. Sixty minutes will be given for the exam. Topics may include:
 - Behavior
 - Disease (causes and sources, signs and symptoms)
 - Medical terminology
 - Medical records
 - Anatomy/physiology
 - Regulations (federal OSHA/MSDS)
 - Patient Management
 - Facility Management
 - Practice Management
 - Genetics
 - Nutrition
 - Husbandry

- Sample Written Exam Questions:

Which of the following is the intermediate host for the dog tapeworm?

- A. Mosquito
- B. Rodent
- C. Flea
- D. Tick

What is the primary body defense against bacteria that may cause disease?

- A. Skin
- B. Antibiotics
- C. Antigens
- D. Lymph nodes

What is one benefit of using a modified live vaccine?

- Possible answers:
 - High level of protection
 - Longer duration of protection
 - Booster not always needed

Current Events Scenario Questions

- The questions associated with the scenarios will allow students to utilize critical thinking and problem-solving skills. The questions will be posted by April 1st and the team essay must be uploaded by April 15th. The points will be added to the team total not to each individual. The response should not exceed four pages.
- Sample Scenario Question

Write a persuasive letter on the issue below to portray your point of view using the provided resource.

- In 2006 a nationwide ruling was established banning the slaughter of horses. Since the ruling there have been serious growing concerns with the welfare and high number of unwanted/neglected horses in the United States. Currently several states are considering reversing the 2006 ban. What are the pros and cons of the original ban and the proposal to reverse it?

Identification

- Participants will identify equipment, parasites and breeds/species. Fifty minutes will be given for this activity. Identification lists are located on the National FFA CDE webpage.
 - Equipment
 - Participants will identify pieces of equipment (actual equipment and photos). They will also need to have general knowledge about the use for each item
 - Parasites
 - Participants will identify parasites (specimen and photos) and explain the life cycles of selected parasites.

- Breeds
 - Participants will identify breeds of small and large animals (photos).

Practicums

- Math Applications Practicum
 - The number of practicum questions will vary based on the type of activity that is assigned. Participants will have 30 minutes to complete the entire math application practicum. Questions may include conversions, dose calculations, dilutions, cost calculations and invoices.
 - Example: Sophie, a golden retriever and her owner have just moved from out-of-state and are reestablishing veterinarian relations at your clinic. Sophie's owner has provided you with her health records from their previous veterinarian. Sophie had been prescribed a diet plan by the previous veterinarian and had been coming into the clinic for weekly weight checks with you. You weigh Sophie and record her weight as 19 kg. The owner would like you to tell her how much weight Sophie has lost. Sophie's last recorded weight was 43.2 lb. How many pounds did Sophie lose since the last weighing?
ANSWER: Sophie has lost 1.4 lb. since the last recorded weighing.
- Handling and Restraining Practicum (Even Years)
 - Participants will be given one handling/restraint activities to complete. Fifteen to thirty minutes will be allotted for this section depending on the activity selected each year. Participants are expected to talk through the handling and restraining steps to a judge as they are being scored. Judges may speak and ask questions to the participant at the end of each activity, if time allows.
- Clinical Procedure Practicum (Odd Years)
 - Participants will be given one clinical procedure activities to complete. Fifteen to thirty minutes will be allotted for this section depending on the activity selected each year. Participants are

expected to talk through the clinical procedure steps to a judge as they are being scored. Judges may speak and ask questions to the participant at the end of each activity, if time allows.

Event Scoring

Activities	Individual Points	Team Points
Written Exam (50 questions @ 2 points each)	100	300
Current Event Scenario Questions	x	100
Identification (50 samples @ 2 points each)	100	300
Math Application Practicum	100	300
Handling/Restraining or Clinical Procedures Practicum	100	300
MAXIMUM POINTS	400	1,300

Tiebreakers

- Team:
 - Combined individual practicum total score
 - Combined individual written exam total score
- Individual:
 - Combined practicum
 - Written Exam Score

References

All identification lists and rubrics can be found on the National FFA CDE webpage.