



NEW JERSEY FFA

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CAREER AND LEADERSHIP  
DEVELOPMENT EVENTS

# Dairy Cattle Evaluation & Management

2017-2021

## Purpose

*The purpose of the New Jersey FFA Dairy Cattle Evaluation and Management Career Development Event is to provide a competitive event for agricultural education students which 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 for industry positions or in management of a modern dairy herd.
- To develop students' skills in observation, analysis, communication and team collaboration.
- 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

*Each team will be comprised of four members.*

- All participants must be FFA members in good standing in their respective chapter.
- A team must consist of four members. Teams must be accompanied by an adult advisor/coach.
- FFA Official Dress for this event is not necessary. However, students must wear an FFA shirt, long pants and closed-toed shoes. Rubber boots are best, but boots with plastic boot covers are acceptable.
- The most current and updated information will be used as industry standards change.
- This event will be used to select the team to represent New Jersey FFA at the National FFA Convention in October. The winning team must receive at least 60% of the total team points to be eligible to advance.
- Contestants are not allowed to take any books or notes to the contest. Only clip boards and blank notepaper will be accepted.
- A timekeeper will be designated; there will be a total of 12 minutes to place each class. For those classes with oral reasons, an additional 8 minutes will be allowed for taking notes on the class.
- All contestants must wear rubber boots which can be disinfected or plastic boot covers.
- Official dress is not necessary. However, an FFA shirt, long pants and close-toed shoes are mandatory.
- Official score cards will be provided on the day of the event and must be turned in when requested.
- New Jersey 4-H's rules and scoring procedures will be followed. FFA members CAN be a part of a 4-H team at this event.

### EVENT FORMAT

#### EQUIPMENT

Each participant must have:

- Clipboard
- Two sharpened No. 2 pencils
- Blank note paper

## FLOW OF EVENT

- **Evaluation** – approximately 1-hour total
- **Oral Reasons** – approximately 2-hours total

## INDIVIDUAL ACTIVITIES

### EVALUATION (300 POINTS)

- Four 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 or may not 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 which identify the animals.
- Each class is worth 50 points maximum for a correct placing.
- Participants will have 12 minutes to place each class. For classes on which oral reasons will be given, participants will be given an additional 8 minutes.

### ORAL REASONS (150 POINTS)

- Oral reasons will be required on two classes. These two classes will be designated by the event committee prior to the actual evaluation of the class.
- Oral reasons will be given 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.
- Participants will have time to prepare each set of oral reasons. No more than two minutes may be used to deliver the reasons before the judges.

## SCORING

| Individual                  | Maximum Points |
|-----------------------------|----------------|
| Evaluation                  | 200            |
| Oral reasons                | 100            |
| <b>TOTAL POSSIBLE SCORE</b> | <b>300</b>     |

## TIEBREAKERS

If a tie occurs, the following events will be used to determine award recipients:

### INDIVIDUAL

- Oral reasons score
- Evaluation score

## OVERALL TEAM

- Total oral reasons score
- Total evaluation score

## AWARDS

Awards will be presented at the CDE awards ceremony at the New Jersey State FFA Convention to individuals and the first-place team based on their rankings. Awards are sponsored by the National FFA Foundation and the New Jersey FFA Association.

### Individual

- Overall Medals
  - Medals – Top three individuals
- H.O. Sampson Certificates (hands-on sections ONLY)
  - Certificate – Top five individuals

### Team

- Plaque Sponsored by the National FFA Foundation – 1<sup>st</sup> place

## 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 past CDE material: [FFA.org](http://FFA.org)
- Hoard's Dairyman- Judging contest and materials, youth tests and quiz questions and current industry issues: [www.hoards.com](http://www.hoards.com)
- Cornell University Department of Animal Science Dairy Resources: <http://www.ansci.cornell.edu/4H/dairycattle/dairyresources.html>
- Virginia Dairy Quiz Bowl study materials: <https://www.vtdairy.dasc.vt.edu/youth/quizbowl/youth-quiz-bowl.html>
- CEV Multimedia, Inc.: [www.cevmultimedia.com](http://www.cevmultimedia.com)
- Holstein Foundation Education Workbooks: [http://www.holsteinfoundation.org/Holstein Foundation Youth Programs: Quiz Bowl Materials](http://www.holsteinfoundation.org/Holstein%20Foundation%20Youth%20Programs%20Quiz%20Bowl%20Materials): <http://www.holsteinfoundation.org/>
- Dairy Herd Improvement: [www.drms.org](http://www.drms.org)
- Current Dairy Unified Scorecard: <http://www.purebreddairycattle.com/pages/Literature.php>
- Gillispie, James R. Modern Livestock and Poultry Production most current edition. Albany, NY: Delmar Cengage Learning, Inc. 2015. Note: confirm publisher and publisher contact. Cengage Publishers [cengage.com](http://cengage.com)



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## Agriculture, Food and Natural Resources Content Standards

|   |                                       |   |
|---|---------------------------------------|---|
| <b>ABS.01.02. Performance Indicator: Read, interpret, evaluate and write statements of purpose to guide business goals, objectives and resource allocation.</b>   |                                       |   |
| ABS.01.02.02.c. Evaluate AFNR business goals and objectives, then make revisions based on data and observations.  | Team Activity – Content               | CCSS.ELA-LITERACY.W.9-10.2<br>CCSS.ELA-LITERACY.W.11-12.2<br>CCSS.ELA-LITERACY.W.9-10.9<br>CCSS.ELA-LITERACY.W.11-12.9<br>CCSS.ELA-LITERACY.RI.9-10.4<br>CCSS.ELA-LITERACY.RI.11-12.4   |
| <b>ABS.01.03. Performance Indicator: Devise and apply management skills to organize and run an AFNR business in an efficient, legal and ethical manner.</b>   |                                       |   |
| ABS.01.03.01.c. Devise strategies to improve the operation of AFNR businesses using management skills.  | Team Activity – Content<br>Event Exam | CCSS.ELA-LITERACY.SL.9-10.6<br>CCSS.ELA-LITERACY.SL.11-12.6<br>CCSS.ELA-LITERACY.L.9-10.6<br>CCSS.ELA-LITERACY.L.11-12.6<br>CCSS.ELA-LITERACY.RST.9-10.4<br>CCSS.ELA-LITERACY.RST.11-12.4   |
| ABS.01.03.02.c. Devise management or operational strategies to address and adhere to local, state, federal, international and industry regulations.   | Team Activity – Content<br>Event Exam | CCSS.ELA-LITERACY.SL.9-10.6<br>CCSS.ELA-LITERACY.SL.11-12.6<br>CCSS.ELA-LITERACY.L.9-10.6<br>CCSS.ELA-LITERACY.L.11-12.6<br>CCSS.ELA-LITERACY.RST.9-10.4<br>CCSS.ELA-LITERACY.RST.11-12.4   |
| <b>ABS.02.02. Performance Indicator: Assemble, interpret and analyze financial information and reports to monitor AFNR business performance and support decision-making (e.g., income statements, balance sheets, cash-flow analysis, inventory reports, break-even analysis, return on investment, taxes, etc.).</b> |                                       |   |
| ABS.02.02.01.b. Prepare and interpret financial reports to describe the performance of AFNR businesses (e.g., efficiency, profitability, net worth, financial ratios, etc.).  | Team Activity – Content<br>Event Exam | CCSS.ELA-LITERACY.W.9-10.9<br>CCSS.ELA-LITERACY.W.11-12.9<br>CCSS.ELA-LITERACY.RH.9-10.7<br>CCSS.ELA-LITERACY.RH.11-12.7<br>CCSS.MATH.CONTENT.HSS.ID.C.7<br>CCSS.MATH.CONTENT.HSS.IC.B.6<br>CCSS.MATH.CONTENT.HSN.Q.A.1<br>Savings: Benchmarks: Grade 12, Statements 3<br>Savings: Benchmarks: Grade 12, Statements 4<br>Savings: Benchmarks: Grade 12, Statements 6<br>Savings: Benchmarks: Grade 12, Statements 7<br>Financial Investing: Benchmarks: Grade 12, Statement 2 |

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| <p>ABS.02.02.02.c. Create recommendations to improve management of inventory in AFNR businesses (e.g., maintaining optimal levels, calculating costs of carrying input and output inventory, supply chain management, etc.).</p> | <p>Team Activity – Content<br/>Team Activity - Presentation<br/>Event Exam</p>              | <p>CCSS.ELA-LITERACY.W.9-10.9<br/>CCSS.ELA-LITERACY.W.11-12.9<br/>CCSS.ELA-LITERACY.RH.9-10.7<br/>CCSS.ELA-LITERACY.RH.11-12.7<br/>CCSS.MATH.CONTENT.HSS.ID.C.7<br/>CCSS.MATH.CONTENT.HSS.IC.B.6<br/>CCSS.MATH.CONTENT.HSN.Q.A.1<br/>Savings: Benchmarks: Grade 12, Statements 3<br/>Savings: Benchmarks: Grade 12, Statements 4<br/>Savings: Benchmarks: Grade 12, Statements 6<br/>Savings: Benchmarks: Grade 12, Statements 7<br/>Financial Investing: Benchmarks: Grade 12, Statement 2</p> |
| <p><b>ABS.03.01. Performance Indicator: Develop, assess and manage cash budgets to achieve AFNR business goals.</b></p>  |   |   |
| <p>ABS.03.01.01.b. Examine and interpret cash budgets for AFNR businesses.</p>   | <p>Team Activity – Content<br/>Event Exam</p>   | <p>CCSS.ELA-LITERACY.RH.9-10.7<br/>CCSS.ELA-LITERACY.RH.11-12.7<br/>CCSS.ELA- LITERACY.L.9-10.6<br/>CCSS.ELA-LITERACY. L.11-12.6<br/>CCSS.ELA- LITERACY.RST.9-10.4<br/>CCSS.ELA- LITERACY.RST.11-12.4<br/>CCSS.MATH.CONTENT.HSS.IC.B.6</p>  |
| <p>ABS.03.01.02.c. Predict the impact of management decisions on cash budgets in AFNR businesses.</p>  | <p>Team Activity – Process<br/>Team Activity – Content<br/>Event Exam</p>                   | <p>CCSS.ELA-LITERACY.RH.9-10.7<br/>CCSS.ELA-LITERACY.RH.11-12.7<br/>CCSS.ELA- LITERACY.L.9-10.6<br/>CCSS.ELA-LITERACY. L.11-12.6<br/>CCSS.ELA- LITERACY.RST.9-10.4<br/>CCSS.ELA- LITERACY.RST.11-12.4<br/>CCSS.MATH.CONTENT.HSS.IC.B.6</p>  |
| <p><b>ABS.04.02. Performance Indicator: Develop production and operational plans for an AFNR business.</b></p>   |   |   |
| <p>ABS.04.02.01.c. Make recommendations to improve operational plans for an AFNR business based on best practices.</p>   | <p>Team Activity – Process<br/>Team Activity – Content<br/>Team Activity - Presentation</p> | <p>AFNR Career Cluster – Agribusiness Systems Pathway, Statement 3<br/>CCSS.ELA-LITERACY.ELA-W.9-10.2<br/>CCSS.ELA-LITERACY.W.11-12.2<br/>CCSS.ELA-LITERACY.L.9-10.6<br/>CCSS.ELA-LITERACY.L.11-12.6<br/>CCSS.ELA-LITERACY.RST.9-10.4<br/>CCSS.ELA-LITERACY.RST.11-12.4</p>   |
| <p>ABS.04.02.02.c. Create strategies to improve the production process of an agricultural product for an AFNR facility (e.g., SWOT- strengths, weaknesses, opportunities and threats, supply chain management, etc.).</p>        | <p>Team Activity – Process<br/>Team Activity – Content<br/>Team Activity - Presentation</p> | <p>AFNR Career Cluster – Agribusiness Systems Pathway, Statement 3<br/>CCSS.ELA-LITERACY.ELA-W.9-10.2<br/>CCSS.ELA-LITERACY.W.11-12.2<br/>CCSS.ELA-LITERACY.L.9-10.6<br/>CCSS.ELA-LITERACY.L.11-12.6<br/>CCSS.ELA-LITERACY.RST.9-10.4<br/>CCSS.ELA-LITERACY.RST.11-12.4</p>   |
| <p>ABS.04.02.02.c. Create strategies to improve the production process of an</p>   | <p>Team Activity – Process</p>  | <p>AFNR Career Cluster – Agribusiness Systems Pathway, Statement 3</p>  |

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| <p>agricultural product for an AFNR facility (e.g., SWOT- strengths, weaknesses, opportunities and threats, supply chain management, etc</p>              | <p>Team Activity – Content<br/>Team Activity - Presentation</p>                             | <p>CCSS.ELA-LITERACY.ELA-W.9-10.2<br/>CCSS.ELA-LITERACY.W.11-12.2<br/>CCSS.ELA-LITERACY.L.9-10.6<br/>CCSS.ELA-LITERACY.L.11-12.6<br/>CCSS.ELA-LITERACY.RST.9-10.4<br/>CCSS.ELA-LITERACY.RST.11-12.4</p> |
| <p><b>CS.01.02. Performance Indicator: Examine technologies and analyze their impact on AFNR systems.</b></p>   |   |   |
| <p>CS.01.02.01.b. Apply appropriate use of technologies in AFNR workplace scenarios.</p>  | <p>Team Activity – Content<br/>Team Activity - Presentation</p>                             |   |
| <p>CS.01.02.01.c. Solve problems in AFNR workplaces or scenarios using technology.</p>  | <p>Team Activity – Content<br/>Team Activity – Presentation<br/>Event Exam</p>              |   |
| <p>CS.01.02.02.b. Analyze how technology is used in AFNR systems to maximize productivity.</p>  | <p>Team Activity – Process<br/>Team Activity – Content</p>                                  |   |
| <p><b>CS.03.01. Performance Indicator: Identify required regulations to maintain and improve safety, health and environmental management systems.</b></p> |   |   |
| <p>CS.03.01.01.b. Assess health, safety and environmental procedures to comply with regulatory and safety standards.</p>                                  | <p>Team Activity – Process<br/>Team Activity – Content<br/>Team Activity - Presentation</p> |   |
| <p><b>CS.03.02. Performance Indicator: Develop a plan to maintain and improve health, safety and environmental compliance and performance.</b></p>        |   |   |
| <p>CS.03.02.01.b. Analyze health and safety performance plans of an AFNR business.</p>  | <p>Team Activity – Content<br/>Team Activity – Presentation<br/>Event Exam</p>              |   |
| <p>CS.03.02.02.b. Develop plans to improve environmental compliance and performance within an AFNR system.</p>  | <p>Team Activity – Content<br/>Team Activity – Presentation</p>                             |   |
| <p><b>CS.03.04. Performance Indicator: Use appropriate protective equipment and demonstrate safe and proper use of AFNR tools and equipment.</b></p>      |   |   |
| <p>CS.03.04.01.c. Design plans to ensure the use of appropriate protective equipment when using various AFNR tools and equipment.</p>                     | <p>Team Activity – Content<br/>Event Exam</p>   |   |
| <p>CS.03.04.02.c. Evaluate and select appropriate tools and equipment to complete AFNR tasks.</p>   | <p>Team Activity – Content<br/>Event Exam</p>   |   |
| <p>CS.03.04.03.b. Assess and demonstrate appropriate operation, storage and maintenance techniques for AFNR tools</p>                                     | <p>Team Activity – Content<br/>Team Activity – Presentation<br/>Event Exam</p>              |   |

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| and equipment.  |  |   |
| CS.03.04.03.c. Devise operation, storage and maintenance plans or schedules for AFNR tools and equipment.   | Team Activity – Content<br>Team Activity – Presentation<br>Event Exam              |   |
| <b>CS.04.01. Performance Indicator: Identify and implement practices to steward natural resources in different AFNR systems.</b>  |  |   |
| CS.04.01.01.b. Analyze available practices to steward natural resources in AFNR systems (e.g., wildlife and land conservation, soil and water practices, ecosystem management, etc.). | Event Exam   |   |
| CS.04.01.01.c. Devise strategies for stewarding natural resources at home and within community.   | Team Activity – Process<br>Team Activity – Content<br>Team Activity - Presentation |   |
| CS.04.01.02.b. Analyze and assess sustainability practices that can be applied in AFNR systems (e.g., energy efficiency, recycle/reuse/repurpose, green resources, etc.).             | Event Exam   |   |
| <b>CS.04.02. Performance Indicator: Assess the natural resource related trends, technologies and policies that impact AFNR systems.</b>   |  |   |
| CS.04.02.01.b. Analyze natural resources trends and technologies and document how they impact AFNR systems (e.g., climate change, green technologies, water resources, etc.).         | Event Exam   |   |
| <b>AS.01.02. Performance Indicator: Assess and select animal production methods for use in animal systems based upon their effectiveness and impacts.</b>                             |  |   |
| AS.01.02.01.c. Evaluate the effectiveness of different production methods and defend the use of selected methods using data and evidence.   | Team Activity – Process<br>Team Activity – Content<br>Team Activity - Presentation | AFNR Career Cluster, Statement 1<br>AFNR Career Cluster – Animal Systems Pathway, Statement 3<br>STEM Career Cluster, Statement 1<br>Buying Goods and Services, Benchmarks: Grade 12, Statement 1<br>Buying Goods and Services, Benchmarks: Grade 12, Statement 3 |
| AS.01.02.03.b. Analyze and evaluate the accuracy and effectiveness of records used in an animal system business.  | Event Exam   | AFNR Career Cluster, Statement 1<br>AFNR Career Cluster – Animal Systems Pathway, Statement 3<br>STEM Career Cluster, Statement 1<br>Buying Goods and Services, Benchmarks: Grade 12, Statement 1<br>Buying Goods and Services, Benchmarks: Grade 12, Statement 3 |
| <b>AS.01.03. Performance Indicator: Analyze and apply laws and sustainable practices to animal agriculture from a global</b>  |  |   |



| perspective.  |  |   |
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| AS.01.03.01.c. Evaluate the impact of laws pertaining to animal agriculture (e.g., pros, cons, effect on individuals, effect on businesses, etc.) and assess the compliance of production practices with established regulations. | Team Activity – Process<br>Team Activity – Content<br>Team Activity – Presentation<br>Event Exam | AFNR Career Cluster, Statement 2<br>AFNR Career Cluster – Animal Systems Pathway, Statement 1<br>STEM Career Cluster, Statement 1, 4<br>CCSS.ELA-Literacy.W.9-10.9b CCSS.ELA-Literacy.W.11-12.9b CCSS.ELA-Literacy.RI.9-10.1<br>CCSS.ELA-Literacy.RI.11-12.1<br>HS-ETS1-1 |
| AS.01.03.02.c. Select, evaluate and defend the use of sustainable practices in animal agriculture.  | Team Activity – Content<br>Team Activity – Presentation  | AFNR Career Cluster, Statement 2<br>AFNR Career Cluster – Animal Systems Pathway, Statement 1<br>STEM Career Cluster, Statement 1, 4<br>CCSS.ELA-Literacy.W.9-10.9b CCSS.ELA-Literacy.W.11-12.9b CCSS.ELA-Literacy.RI.9-10.1<br>CCSS.ELA-Literacy.RI.11-12.1<br>HS-ETS1-1 |
| AS.02.01. Performance Indicator: Demonstrate management techniques that ensure animal welfare.  |  |   |
| AS.02.01.01.b. Design programs that assure the welfare of animals and prevent abuse or mistreatment.  | Event Exam   | HS-ETS1-2   |
| AS.02.01.02.c. Devise, implement and evaluate safety procedures and plans for working with animals by species using information based on animal behavior and responses.   | Team Activity – Content<br>Team Activity – Presentation  | HS-ETS1-2   |
| AS.02.01.03.b. Analyze and document animal husbandry practices and their impact on animal welfare.  | Team Activity – Content<br>Event Exam  | HS-ETS1-2   |
| AS.03.01. Performance Indicator: Analyze the nutritional needs of animals.  |  |   |
| AS.03.01.01.c. Assess nutritional needs for an individual animal based on its growth stage and production system.   | Team Activity – Content<br>Team Activity - Presentation<br>Event Exam                            |   |
| AS.03.02 Performance Indicator: Analyze feed rations and assess if they meet the nutritional needs of animals.  |  |   |
| AS.03.02.01.c. Select appropriate feedstuffs for animals based on a variety of factors (e.g., economics, digestive system and nutritional needs, etc.).   | Team Activity – Content<br>Team Activity - Presentation<br>Event Exam                            |   |
| AS.03.02.02.c. Select and utilize animal feeds based on nutritional requirements, using rations for maximum nutrition and   | Team Activity – Content<br>Team Activity - Presentation  |   |

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| optimal economic production.  | Event Exam  |  |
| AS.03.02.03.b. Compare and contrast methods that utilize feed additives and growth promotants with production practices that do not, (e.g., organic versus conventional production methods).  | Event Exam  |  |
| AS.03.02.03.c. Make and defend decisions regarding whether to use feed additives and growth promotants after researching and considering scientific evidence, production system needs and goals, and input from industry professionals. | Team Activity – Content<br>Team Activity - Presentation               |  |
| <b>AS.03.03 Performance Indicator: Utilize industry tools to make animal nutrition decisions.</b>   |   |  |
| AS.03.03.01.b. Utilize tools and equipment to perform animal nutrition tasks.   | Event Exam  |  |
| AS.03.03.01.c. Select, evaluate and defend the use of specific tools or equipment used to perform animal nutrition tasks.   | Team Activity – Content<br>Team Activity - Presentation               |  |
| AS.03.03.02.b. Analyze and apply information from a feed label and feeding directions to feed animals.  | Event Exam  |  |
| AS.03.03.03.b. Analyze technologies used to provide animal nutrition and summarize their potential benefits and consequences.   | Event Exam  |  |
| AS.03.03.03.c. Research and recommend technology improvements to provide proper nutrition to animals.   | Team Activity – Content<br>Team Activity - Presentation               |  |
| <b>AS.04.01. Performance Indicator: Evaluate animals for breeding readiness and soundness.</b>  |   |  |
| AS.04.01.02.c. Evaluate and select animals for reproductive readiness.  | Selection Classes   |  |
| AS.04.02.03.c. Treat or cull animals with reproductive problems.  | Event Exam  |  |
| <b>AS.04.02. Performance Indicator: Apply scientific principles to select and care for breeding animals.</b>  |   |  |
| AS.04.02.01.c. Select and evaluate a breeding system based on the principles of genetics.   | Team Activity – Content<br>Team Activity - Presentation<br>Event Exam | CCSS.MATH.CONTENT.HSS.MD.A.3<br>HS-LS3-2<br>HS-LS3-3 |
| AS.04.02.02.c. Select and evaluate breeding animals and determine the   | Team Activity – Content   | CCSS.MATH.CONTENT.HSS.MD.A.3                         |

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| probability of a given trait in their offspring.  | Team Activity - Presentation<br>Team Activity - Process<br>Event Exam<br>Selection Classes | HS-LS3-2<br>HS-LS3-3  |
| AS.04.02.04.b. Analyze the care needs for breeding stock in each stage of growth.   | Event Exam   | CCSS.MATH.CONTENT.HSS.MD.A.3<br>HS-LS3-2<br>HS-LS3-3  |
| <b>AS.04.03 Performance Indicator: Apply scientific principles to breed animals.</b>  |  |   |
| AS.04.03.01.c. Select animal breeding methods based on reproductive and economic efficiency.  | Team Activity – Content<br>Team Activity - Presentation                                    |   |
| AS.04.03.02.c. Evaluate the implementation and effectiveness of artificial insemination techniques.   | Team Activity – Content<br>Team Activity – Presentation                                    |   |
| AS.04.03.03.b. Analyze the processes of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.                       | Event Exam   |   |
| AS.04.03.03.c. Create and evaluate plans and procedures for estrous synchronization, superovulation, flushing, embryo transfer and other reproductive management practices.             | Team Activity – Content<br>Team Activity – Presentation<br>Event Exam                      |   |
| AS.04.03.04.c. Select and assess animal performance based on quantitative breeding values for specific characteristics.   | Team Activity – Content<br>Team Activity – Presentation<br>Event Exam<br>Selection Classes |   |
| <b>AS.05.01. Performance Indicator: Design animal housing, equipment and handling facilities for the major systems of animal production.</b>  |  |   |
| AS.05.01.01.b. Critique designs for an animal facility and prescribe alternative layouts and adjustments for the safe, sustainable and efficient use of the facility.                   | Team Activity – Content<br>Team Activity – Presentation<br>Event Exam                      | AFNR Career Cluster – Animal Systems Pathway, Statement 2<br>STEM Career Cluster, Statement 4<br>STEM Career Cluster, Statement 5 |
| AS.05.01.02.b. Analyze the use of modern equipment, technology and handling facility procedures and determine if they enhance the safe, economic and sustainable production of animals. | Team Activity – Content<br>Team Activity – Presentation<br>Event Exam                      | AFNR Career Cluster – Animal Systems Pathway, Statement 2<br>STEM Career Cluster, Statement 4<br>STEM Career Cluster, Statement 5 |
| <b>AS.06.03. Performance Indicator: Select animals for specific purposes and maximum performance based on anatomy and physiology.</b>   |  |   |
| Sample Measurement: The following sample measurement strands are provided to guide the development of measurable activities   |  |   |

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| (at different levels of proficiency) to assess students' attainment of knowledge and skills related to the above performance indicator. The topics represented by each strand are not all-encompassing.                                |  |   |
| AS.06.03.01.c. Evaluate and select animals to maximize performance based on anatomical and physiological characteristics that affect health, growth and reproduction   | Selection Classes  | STEM Career Cluster, Statement 5  |
| AS.06.03.02.c. Choose, implement and evaluate sustainable and efficient procedures (e.g., selection, housing, nutrition and management) to produce consistently high-quality animals that are well suited for their intended purposes. | Team Activity – Content<br>Team Activity – Presentation<br>Selection Classes | STEM Career Cluster, Statement 5  |
| AS.06.03.03.c. Evaluate and select animals to produce superior animal products based on industry standards.  | Selection Classes  | STEM Career Cluster, Statement 5  |
| <b>AS.07.01. Performance Indicator: Design programs to prevent animal diseases, parasites and other disorders and ensure animal welfare.</b>   |  |   |
| AS.07.01.02.c. Determine when an animal health concern needs to be referred to an animal health professional.  | Event Exam   | CCSS.MATH.CONTENT.HSN.Q.A.1<br>CCSS.MATH.CONTENT.HSN.Q.A.2<br>CCSS.MATH.CONTENT.HSN.Q.A.3 |
| AS.07.01.03.b. Identify and describe common illnesses and disorders of animals based on symptoms and problems caused by wounds, diseases, parasites and physiological disorders.   | Event Exam   | CCSS.MATH.CONTENT.HSN.Q.A.1<br>CCSS.MATH.CONTENT.HSN.Q.A.2<br>CCSS.MATH.CONTENT.HSN.Q.A.3 |
| AS.07.01.04.c. Design and implement a health maintenance and a disease and disorder prevention plan for animals in their natural and/or confined environments.   | Team Activity – Content<br>Team Activity – Presentation                      | CCSS.MATH.CONTENT.HSN.Q.A.1<br>CCSS.MATH.CONTENT.HSN.Q.A.2<br>CCSS.MATH.CONTENT.HSN.Q.A.3 |
| AS.07.01.05.c. Identify and describe surgical and nonsurgical veterinary treatments and procedures to meet specific animal health care objectives.   | Team Activity – Content<br>Team Activity – Presentation                      | CCSS.MATH.CONTENT.HSN.Q.A.1<br>CCSS.MATH.CONTENT.HSN.Q.A.2<br>CCSS.MATH.CONTENT.HSN.Q.A.3 |
| <b>AS.07.02. Performance Indicator: Analyze biosecurity measures utilized to protect the welfare of animals.</b>   |  |   |
| AS.07.02.01.c. Design and evaluate a biosecurity plan for an animal production operation.  | Team Activity – Content<br>Team Activity – Presentation<br>Event Exam        |   |
| <b>AS.08.01. Performance Indicator: Design and implement methods to reduce the effects of animal production on the environment.</b>  |  |   |
| AS.08.01.01.b. Assess methods of reducing the effects of animal agriculture on the environment.  | Event Exam   | AFNR Career Cluster – Environmental Service Systems Pathway, Statement 1<br>HS-LS2-6      |

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|  |  | HS-LS2-7   |
| AS.08.01.01.c. Devise a plan that includes measures to reduce the impact of animal agriculture on the environment.   | Team Activity – Content<br>Team Activity – Presentation  | AFNR Career Cluster – Environmental Service Systems Pathway, Statement 1<br>HS-LS2-6<br>HS-LS2-7 |
| <b>AS.08.02. Performance Indicator: Evaluate the effects of environmental conditions on animals and create plans to ensure favorable environments for animals.</b>   |  |  |
| AS.08.02.02.c. Devise and improve plans to establish favorable environmental conditions for animal growth and performance based on a variety of factors (e.g., economic feasibility, environmental sustainability, impact on animals, etc.). | Team Activity – Content<br>Team Activity – Presentation<br>Event Exam                            | HS.LS4-6   |
| <b>CRP.01.01. Performance Indicator: Model personal responsibility in the workplace and community.</b>   |  |  |
| CRP.01.01.01.c. Evaluate past workplace and community situations and determine how personal responsibility positively or negatively impacted outcomes.   | Team Activity – Content<br>Team Activity – Presentation  |  |
| <b>CRP.01.02 Performance Indicator: Evaluate and consider the near-term and long-term impacts of personal and professional decisions on employers and community before taking action.</b>  |  |  |
| CRP.01.02.02.c. Make and defend professional decisions after evaluating their near- and long-term impacts on employers and community.  | Oral Reasons   |  |
| <b>CRP.01.03. Performance Indicator: Identify and act upon opportunities for professional and civic service at work and in the community.</b>  |  |  |
| CRP.01.03.01.c. Devise strategies for involvement in professional service opportunities at work and in the community (e.g., coaching/mentorship, presentations at meetings, etc.).   | Team Activity – Content<br>Team Activity – Presentation  |  |
| <b>CRP.02.01. Performance Indicator: Use strategic thinking to connect and apply academic learning, knowledge and skills to solve problems in the workplace and community.</b>   |  |  |
| CRP.02.01.01.b. Assess workplace problems and identify the most appropriate academic knowledge and skills to apply.  | Team Activity – Process<br>Team Activity – Content<br>Team Activity – Presentation<br>Event Exam |  |
| CRP.02.01.01.c. Apply academic knowledge and skills to solve problems in the workplace and reflect upon the results achieved.  | Event Exam   |  |

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| <b>CRP.02.02. Performance Indicator: Use strategic thinking to connect and apply technical concepts to solve problems in the workplace and community.</b>                                   |  |  |
| CRP.02.02.01.b. Assess workplace problems and distinguish the most appropriate technical concepts to apply.   | Team Activity – Process<br>Team Activity – Content<br>Team Activity – Presentation<br>Event Exam |  |
| CRP.02.02.02.b. Assess community problems and identify the most appropriate technical concepts to apply.  | Team Activity – Process<br>Team Activity – Content<br>Event Exam                                 |  |
| <b>CRP.04.01. Performance Indicator: Speak using strategies that ensure clarity, logic, purpose and professionalism in formal and informal settings.</b>                                    |  |  |
| CRP.04.01.02.b. Apply strategies for speaking with clarity, logic, purpose and professionalism in a variety of situations in formal and informal settings.                                  | Team Activity – Process<br>Team Activity – Content<br>Team Activity – Presentation               |  |
| <b>CRP.04.03. Performance Indicator: Model active listening strategies when interacting with others in formal and informal settings.</b>  |  |  |
| CRP.04.03.01.b. Apply active listening strategies (e.g., be attentive, observe non-verbal cues, ask clarifying questions, etc.).  | Team Activity – Process  |  |
| CRP.04.03.02.c. Model active listening strategies in formal and informal settings.  | Team Activity – Process  |  |
| <b>CRP.05.02. Performance Indicator: Make, defend and evaluate decisions at work and in the community using information about the potential environmental, social and economic impacts.</b> |  |  |
| CRP.05.02.01.c. Evaluate and defend decisions applied in the workplace and community situations.  | Team Activity – Content<br>Team Activity – Presentation<br>Oral Reasons                          |  |
| CRP.05.02.02.c. Evaluate workplace and community situations and propose decisions to be made based upon the positive impact made on environment, social and economic areas.                 | Team Activity – Process<br>Team Activity – Content<br>Team Activity – Presentation               |  |
| <b>CRP.06.02. Performance Indicator: Assess a variety of workplace and community situations to identify ways to add value and improve the efficiency of processes and procedures.</b>       |  |  |
| CRP.06.02.01.c. Evaluate past workplace and community situations and determine how processes and procedures impacted outcomes.  | Team Activity – Process<br>Team Activity – Content<br>Team Activity – Presentation               |  |
| <b>CRP.06.03. Performance Indicator: Create and execute a plan of action to act upon new ideas and introduce innovations to workplace and community organizations.</b>                      |  |  |

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| CRP.06.03.02.b. Elicit and assimilate input and feedback from individuals and organizations about new ideas or innovations for the workplace or community.   | Team Activity – Process  |  |
| <b>CRP.07.02. Performance Indicator: Evaluate the validity of sources and data used when considering the adoption of new technologies, practices and ideas in the workplace and community.</b>                         |  |  |
| CRP.07.02.01.b. Assess data sources for reliability and validity.  | Team Activity – Process<br>Team Activity – Presentation                            |  |
| CRP.07.02.02.b. Assimilate data to assist in making a decision about the adoption of a new technology, practice or idea by workplaces and community organizations.   | Team Activity – Process<br>Team Activity – Presentation                            | CRP.07.02.02.c. Create and defend proposals for new technologies, practices and ideas using valid and reliable data sources. |
| <b>CRP.08.01. Performance Indicator: Apply reason and logic to evaluate workplace and community situations from multiple perspectives.</b>   |  |  |
| CRP.08.01.01.b. Apply steps for critical thinking to a variety of workplace and community situations.  | Team Activity – Process  |  |
| CRP.08.01.02.b. Assess solutions to workplace and community problems for evidence of reason, logic and consideration of multiple perspectives.   | Team Activity – Process  |  |
| <b>CRP.08.02. Performance Indicator: Investigate, prioritize and select solutions to solve problems in the workplace and community.</b>  |  |  |
| CRP.08.02.01.b. Assimilate and prioritize potential solutions to solve problems in the workplace and community.  | Team Activity – Process  |  |
| CRP.08.02.02.c. Evaluate and select solutions with greatest potential for success to solve workplace and community problems.   | Team Activity – Process  |  |
| <b>CRP.08.03. Performance Indicator: Establish plans to solve workplace and community problems and execute them with resiliency.</b>   |  |  |
| CRP.08.03.02.b. Create plans to solve workplace and community problems.  | Team Activity – Process<br>Team Activity – Content<br>Team Activity – Presentation |  |
| <b>CRP.09.03. Performance Indicator: Demonstrate behaviors that contribute to a positive morale and culture in the workplace and community (e.g., positively influencing others, effectively communicating, etc.).</b> |  |  |
| CRP.09.03.02.c. Model respectful and purposeful behaviors that contribute to positive morale and culture in the workplace and community (e.g., effectively communicating, recognizing                                  | Team Activity – Process  |  |

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| accomplishments of others, etc.).  |   |                       |
| <b>CRP.11.01. Performance Indicator: Research, select and use new technologies, tools and applications to maximize productivity in the workplace and community.</b>  |   |                       |
| CRP.11.01.02.c. Evaluate effectiveness and make recommendations for using new technologies, tools and applications in the workplace and community.   | Team Activity – Content<br>Team Activity – Presentation               |                       |
| <b>CRP.12.01. Performance Indicator: Contribute to team-oriented projects and builds consensus to accomplish results using cultural global competence in the workplace and community.</b>  |   |                       |
| CRP.12.01.03.b. Assess the need and benefit for cultural and global competency in team settings at work and in the community.  | Team Activity – Process   |                       |
| <b>CRP.12.02. Performance Indicator: Create and implement strategies to engage team members to work toward team and organizational goals in a variety of workplace and community situations (e.g., meetings, presentations, etc.).</b> |   |                       |
| CRP.12.02.02.b. Select strategies to engage team members and apply in a variety of situations.   | Team Activity – Presentation<br>Team Activity – Process               |                       |
| <b>BS.03.04. Performance Indicator: Apply biotechnology principles, techniques and processes to enhance plant and animal care and production (e.g., selective breeding, pharmaceuticals, biodiversity, etc.).</b>                      |   |                       |
| BS.03.04.02.b. Assess the benefits, risks and opportunities associated with using biotechnology to promote animal health.  | Team Activity – Content<br>Team Activity – Presentation<br>Event Exam | HS-ETS1-2<br>HS-LS4-6 |

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