

CTE CONTENT AREA: Agriculture

CONTENT MODULE TITLE: Animals in the Agriculture Industry

MODULE DESCRIPTION

This module introduces students to historical and scientific developments related to the management and welfare of domesticated animals. Students investigate various animal agriculture industries and the products, services, and issues associated with each. Students explore the wide variety of career options related to animal agriculture and identify the knowledge, skills, education, and training necessary for success within these fields.

GUIDING QUESTION

What knowledge and skills are necessary to demonstrate introductory understanding of the development, management, and care of animals in the agriculture industry?

MODULE CONTENT

Animals in the Agriculture Industry

1. Animal Origins

Students will

- a) List and describe characteristics of wild animals, such as appearance to aid survival, behavior around humans, predator and forager feeding, and reproduction
- b) Define "animal domestication" and describe characteristics of domesticated animals
- c) Explain how groups of animals descending from a common ancestry and possessing certain common characteristics are classified

2. Conditions and Practices for Animal Care

Students will

- a) Describe indicators of animal well-being, such as animal behavior, physiology, longevity, and reproduction
- b) Summarize environmental conditions that impact animal welfare, such as weather, sources of water, and food resources
- c) Analyze the nutritional needs of animal species
- d) Differentiate between the types of facilities needed to house animal species safely and efficiently
- e) Evaluate safety procedures for working with animal species based on animal behavior and responses
- f) Explain the implications of animal welfare and animal rights in the care and maintenance of animals
- g) Summarize the challenges involved in working with animals and list resources available to overcome them, including equipment, tools, and technology

3. Production

Students will

- a) Identify and summarize the effects of animal agriculture on the environment, such as

- waste disposal, carbon footprint, air quality, and environmental efficiencies
- b) Identify and categorize terms and methods related to animal production, such as sustainable conventional, humanely raised, natural, and organic
 - c) Explain how farmers work with the lifecycle of animals (breeding) to produce animals for market

4. Animal Products and Food Systems

Students will

- a) Understand and explain that animals are raised for meat and by-products until the animals reach the age/size to produce desired products for human consumption
- b) List products obtained from animals for everyday life
- c) Trace the distribution system for animal products
- d) Research and evaluate programs to assure the safety of animal products for consumption

5. Career in Animal Science

Students will

- a) Investigate a career in animal agriculture and identify the pathways used to reach that career
- b) Assess personal knowledge, skills, and interest in careers in animal agriculture and evaluate personal suitability for these careers

ILLUSTRATIVE ACTIVITIES by Theme Module

Career and Community Connections

Prepare a Local Agricultural Product

Invite a local producer of an animal product to class to discuss the process of bringing local agricultural products to market. Ask the producer to mentor the class as students prepare or process a local agricultural product, such as yogurt, cheese, butter, or jerky. Students test market their product at an afterschool or evening event.

Communication and Interpersonal Relationships

Animal Life Essay

Students research how a specific animal species spends a typical day when raised under a particular method of animal production: sustainable, conventional, humanely raised, natural, or organic. Students write and present a "first-animal" essay about a day in the life of the animal researched. A writing prompt might be: "I woke up this morning and discovered I had been transformed into a _____ (calf, bull, hen, etc.)"

Financial and Consumer Literacy

Cost of Raising an Animal

Students research the needs of an animal they are interested in raising, including feed, facility, bedding, utilities, veterinarian visits, and labor. They will determine the cost for each of these needs and develop a yearly budget showing the costs and offsets for the animal of their choice. Students will determine whether they would purchase this animal and write a reflection justifying their choice.

Health, Safety, and Wellness

Safety Poster

Students work in teams to devise safety plans for working with animal species using information based on the animal's typical behavior and responses. Teams create digital or hardcopy posters on the safe and proper handling of an animal of their choice. Teams present their posters to the class and respond to questions posed by their classmates.

Problem Solving and Innovation

Animal Nutritionist

Students discover the roles and responsibilities of animal nutritionists in protecting the health of animals in captivity. Students take on the role of animal nutritionist and evaluate the ingredients in pet food against the nutritional needs of the animals the food is meant to feed. Students suggest ways the pet food could be altered to better meet the animal's nutritive and digestive needs. Students decide whether they would use the pet food for an animal in their care and justify their decision.

Sustainability

Fish Farming

Students discover the sources of various fish and seafood and compare wild-caught and farm-raised aquaculture systems. Students research how overfishing has contributed to the damage of the ocean ecosystem and compare findings to habitat and ecosystem damage due to alterations for fish farms.

STANDARDS ADDRESSED

New York State Career Development and Occupational Studies (CDOS) Standards

Intermediate Level

<http://www.p12.nysed.gov/cte/>

Standard 1: Career Development

Students will be knowledgeable about the world of work, explore career options, and relate personal skills, aptitudes, and abilities to future career decisions.

Standard 2: Integrated Learning

Students will demonstrate how academic knowledge and skills are applied in the workplace and other settings.

Standard 3a: Universal Foundation Skills

Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.

Common Career Technical Core Standards

<https://www.careertech.org/career-ready-practices>

Career Ready Practices

1. Act as a responsible and contributing citizen and employee
2. Apply appropriate and academic and technical skills
3. Attend to personal health and financial well-being

June 2018

NYS Middle-level CTE

Preliminary Release for Field Review and Piloting

4. Communicate clearly and effectively and with reason
5. Consider environmental, social, and economic impacts of decisions
7. Employ valid and reliable research strategies
8. Utilize critical thinking to make sense of problems and persevere in solving them
9. Model integrity, ethical leadership, and effective management
10. Plan education and career paths aligned to personal goals
11. Use technology to enhance productivity

National Agricultural Education Standards

<https://www.ffa.org/thecouncil/afnr>

- CS.05. Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food, and Natural Resources career pathways
 - AS.01. Analyze historic and current trends impacting the animal systems industry
 - AS.02. Utilize best-practice protocols based upon animal behaviors for animal husbandry and welfare
 - AS.05. Evaluate environmental factors affecting animal performance and implement procedures for enhancing animal performance and animal health
 - AS.06. Classify, evaluate, and select animals based on anatomical and physiological characteristics
- * CRP .01, .02, .03, .05, .07, .08, .09, .10, .11 Standards coincide with Common Career Technical Core Standards

RESOURCES

New York Agriculture In The Classroom (NYAITC)

www.agclassroom.org/ny/

This website is partnership of Cornell University, the NYS Department of Agriculture and Markets, the NYS Education Department, Cornell Cooperative Extension, and the New York Farm Bureau. Resources include the Agricultural Literacy Curriculum Matrix, lesson plans, and websites for classroom use.

National FFA

Ag Explorer

<https://www.agexplorer.com>

National FFA and Discovery Education have created a comprehensive career resource to help students explore the broad range of careers within the industry of agriculture. Students learn about agriculture careers by watching videos, exploring career pages and completing Career Finder interactive option.

New York State FFA

nysffa.org

The NYS FFA webpage contains information on events. Junior Competition Events information, FFA Manual, FFA Student handbook, and state contacts are also available.

American Farm Bureau Foundation for Agriculture

June 2018

NYS Middle-level CTE

Preliminary Release for Field Review and Piloting

www.agfoundation.org

This website offers free downloadable materials to help students develop agricultural literacy. The site includes links to other resources for classroom use. Some materials are specifically developed for middle-school students.

New York State Department of Labor

New York State Career Zone

<https://www.careerzone.ny.gov>

Career Zone is a no-cost online career exploration and planning tool developed by the New York State Department of Labor. It offers career and education information on thousands of careers, as well as, self-assessment and career planning tools. Career Zone is appropriate for users from middle school through adult.

United States Department of Labor

CareerOneStop

<https://www.careeronestop.org>

CareerOneStop is the career, training, and job search website for the U.S. Department of Labor. The website serves job seekers, businesses, students, and career advisors with a variety of free online tools, information, and resources.

Association of Career and Technical Education

Career Planning Guide

https://www.acteonline.org/wp-content/uploads/2018/02/ACTE_CC_Paper_FINAL.pdf

Research has identified middle school as a time when students can benefit the most from career exploration, a process of building self-awareness, learning about potential careers, and developing a plan for reaching future goals.

AdvanceCTE

Middle Level Career Interest Inventory

<https://cte.careertech.org/sites/default/files/StudentInterestSurvey-English.pdf>

AdvanceCTE provides a Career Interest Inventory worksheet to use with students in helping them identify the potential matches to the 16 career clusters available to them.

Association of CTE Administrators (ACTEA)

CTE Strong Videos

<http://www.ctestrong.com>

Edge Factor has created a series of videos related to career and education that provide students with a very contemporary perspective on CTE options. Career Cluster videos provide a new look at the many career options that students have in high school and beyond.

Career and Technical Education Technical Assistance Center of New York (CTE TAC)

<http://nyctecenter.org/>

The Career and Technical Education Technical Assistance Center (CTE TAC) operates under a state contract to assist the New York State Education Department (NYSED) in carrying out its mission of improving the quality, access, and delivery of career and technical education through research-based methods and strategies resulting in broader CTE opportunities for all students.

June 2018

NYS Middle-level CTE

Preliminary Release for Field Review and Piloting

