

**NEW YORK STATE EDUCATION DEPARTMENT  
MIDDLE LEVEL CAREER AND TECHNICAL EDUCATION  
AGRICULTURAL EDUCATION  
ANIMALS IN THE AGRICULTURE INDUSTRY  
CONTENT MODULE  
REFORMATTED MAY 2023**



## 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

### 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

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#### **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

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#### **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. CAREERS IN ANIMAL SCIENCE

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#### **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

These activities are intended to serve as examples of how the content in this module could be tied to each of the six middle level themes.

## CAREER AND COMMUNITY OPPORTUNITIES

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### **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

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### **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

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### **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

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### **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

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### **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

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### **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

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#### **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

### 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
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

- 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

**Disclaimer:** Posting of resources on this form does not constitute an endorsement from the New York State Education Department nor does it imply that the following resources are mandatory or the only ones that can be used. Teachers and administrators ensure that resources align with local policies and are responsible for choosing the resources have the final authority, in alignment with local policies, to choose and utilize the resources that best meet the needs of their students. Questions regarding compliance with [Education Law 2D](#) should be directed to your administrator and/or chief information officer.

## NEW YORK AGRICULTURE IN THE CLASSROOM (NYAITC)

<https://newyork.agclassroom.org/>

This website is a 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.discoveryeducation.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 the videos, exploring the career pages and completing the Career Finder interactive.

## NEW YORK STATE FFA

[nysffa.org](http://nysffa.org)

The New York State FFA webpage houses information on events. Information about Junior Competition Events, FFA Manual, FFA Student handbook, and state contacts are available.

## AMERICAN FARM BUREAU FOUNDATION FOR AGRICULTURE

[www.agfoundation.org](http://www.agfoundation.org)

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

## NEW YORK STATE DEPARTMENT OF LABOR 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](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.

## ADVANCE CTE 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.

## CAREER AND TECHNICAL EDUCATION TECHNICAL ASSISTANCE CENTER OF NEW YORK

<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.