

NEW YORK STATE EDUCATION DEPARTMENT
MIDDLE LEVEL CAREER AND TECHNICAL EDUCATION
AGRICULTURAL EDUCATION
PLANTS IN THE AGRICULTURE INDUSTRY
CONTENT MODULE
Z & K Z D d d 2023

3. PLANT PRODUCTION

STUDENTS WILL:

- a) Explain how farmers work with the lifecycle of plants to harvest crops for market
- b) Demonstrate plant propagation techniques
- c) Observe and record environmental conditions during the germination, growth, and development of a crop
- d) Monitor the progress of plantings and determine the need to adjust environmental conditions
- e) Compare and contrast different plant production systems, such as conventional, organic, hydroponic, and aquaponic
- f) Identify and summarize the effects of plant agriculture on the environment, such as waste disposal, carbon footprint, air quality, and environmental efficiencies

PROBLEM SOLVING AND INNOVATION

PERISHABLE FRUIT PACKAGING

Provide students with scholarly resources that provide information on the importance of product packaging for maintaining the quality of fresh fruits during transport to market. As a class, discuss the balance amongst function, food safety, and economics in perishable fruit packaging. In small groups, students design a protective package for shipping perishable fruit. Students present designs to the class for suggestion and revision. Groups test their designs by shipping fruit to a designated location. Evaluate the results.

SUSTAINABILITY

COMMUNITY GARDENS

Students conduct seed germination tests to determine optimal conditions for germination rate and seedling viability and vigor. Students start vegetable seeds under these conditions and transplant them to a home, school, or community garden. Students provide plant recipients with a link to a class summary of the optimal conditions for seed germination.

STANDARDS ADDRESSED

NEW YORK STATE CAREER DEVELOPMENT AND OCCUPATIONAL STUDIES (CDOS) STANDARDS

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 a

CORNELL UNIVERSITY COLLEGE OF AGRICULTURE AND LIFE SCIENCES MASTER GARDENER PROGRAM

<https://gardening.cals.cornell.edu/cornellcooperativeextensionmastergardenervolunteerprogram/>

Cornell Cooperative Extension (CCE) is part of the USDA's National Institute of Food and Agriculture Cooperative Extension System. CCE is linked to Cornell University and positioned to provide best practices grounded in research-based knowledge. These practices foster the skills, knowledge, and attitudes essential for creating successful gardening experiences for households, schools, and community organizations using gardening as a tool to achieve desired outcomes.

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 to explore the Career Finder interactive.

NEW YORK STATE FFA

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

CAREER AND TECHNICAL EDUCATION TECHNICAL ASSISTANCE CENTER 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.