

QUICK REFERENCE: 12TH GRADE AGRICULTURE

A. GLOBAL AGRICULTURAL SYSTEMS

Content Standard

Students will learn about the role of food, fiber, and natural resource systems in their lives and the lives of others around the world.

Rationale:

Knowledge of global agricultural systems and the natural resources required to produce food and fiber used in daily life leads students to understand the relationship between production and sustainability. Understanding food and fiber production, distribution, and consumption at local, national, and international levels allows students to comprehend the complex interdependence that exists within agriculture.

PERFORMANCE STANDARDS

By the end of grade 12 students will:

- A.12.1 Identify how political policies and issues shape and influence food and fiber systems (see SS D.12.4, D.12.8, D.12.13)
- analyze environmental issues that influence the food and fiber system in Wisconsin, the nation, and the world
 - understand how a country's infrastructure affects food and fiber distribution
 - be aware of the involvement and influence of government agencies on marketing of food and fiber commodities
 - understand the effects of urbanization on a society and its ability to produce food
 - identify and analyze food-fiber production/processing issues that cross state and country boundaries (e.g., water use and water pollution)
- A.12.2 Understand the variety, complexity, and size of the agricultural industry in the world (see SS D.12.2, D.12.8)
- trace the pathway of food and fiber from origin to consumer at local, state, national, and international levels
 - give examples of recent food safety issues
 - understand how food and fiber are distributed internationally
 - give examples of trade agreements that influence the global marketing of food and fiber commodities
 - explain why language and cultural understanding are key to international careers
- A.12.3 Describe how global interdependence benefits the production and distribution of food and fiber (see SS D.12.4)
- explain how the interdependence of food and fiber production impacts the price of consumer products
 - understand the economic advantage of producing food and fiber in one country vs. another country

By the end of grade 12 agricultural education students will:

A.9-12.1 Engage in applied learning experiences that incorporate global agricultural principles

A.9-12.2 Continue developing career interests within a work-based program that includes international career opportunities

A.9-12.3 Participate actively in community service

A.9-12.4 Develop advanced leadership skills through participation in FFA

**Note: The standards for agriculture education students in grades 6-12 have been identified in their broadest form in order to provide school districts the opportunity to tailor standards to meet local needs.*

B. TECHNOLOGY/INFORMATION

Content Standard

Students will demonstrate the ability to access information from multiple sources, synthesize the information, and use it for the technological improvement and stewardship of food, fiber, and natural resource systems.

Rationale:

The use of technology for gathering information and producing products within the food, fiber, and natural resource industries is essential in the global marketplace. Producers, processors, manufacturers, and researchers who utilize technology will be able to compete better in the global marketplace. Students must realize that using technology and understanding its potential are lifelong skills necessary for employment and existence in society.

PERFORMANCE STANDARDS

By the end of grade 12 students will:

- B.12.1 Apply knowledge of technology to identify and solve problems (see SC H.12.3, H.12.4, H.12.5)
- use a software program to compile and analyze statistical data and prepare a presentation for a group
 - use an integrated software program to solve a business-related problem
 - prepare a report predicting how technology may change various aspects of the food and fiber industries
- B.12.2 Select and communicate information in an appropriate format; e.g., oral, written, graphic, pictorial, multimedia (see LA B.12.1, C.12.1)
- prepare a three-year financial report showing the annual revenue and expenses of a student organization and present that information to the group (e.g., FFA, student council, etc.)
 - design a chart or graph to evaluate personal progress toward a goal or objective
 - collect the necessary data from local employers to develop a speakers' bureau for the school
 - complete a job application correctly
- B.12.3 Use technology to acquire, organize, and communicate information by entering, modifying, retrieving, and storing data (see LA B.12.2)
- construct a computer-generated form to survey local employers for possible participation in a job shadowing program, mentorships, Supervised Agricultural Experience, and co-op education sites
 - use graphics software to present survey finding to the class
 - use telecommunications software to access and communicate information about the food industry (e.g., food safety, product development, commodity pricing)
 - use presentation graphics software which illustrates to a group of employers the benefits of work-based learning through a Supervised Agricultural Experience Program
 - use technology to record and organize statistical information for a school fundraising event (e.g., sales of fruit, flowers, cheese, candy, bedding plants)

- B.12.4 Access and use information for a class presentation about the impact of new technologies on the products manufactured and produced; e.g., biotechnology (see LA C.12.1)
- satellite technology (global positioning systems and its applications)
 - biotechnology (e.g., cloning, genetic engineering, medicine, criminal justice, vaccines, enzyme manufacturing)
- B.12.5 Explore various career opportunities in the food, fiber, and natural resources industries using available forms of technology (see LA B.12.2)
- seek information from CD-ROMs and the World Wide Web
 - interview employers and/or current employees using current technologies (e.g., videoconferencing, e-mail, videophone)
 - visit websites of potential employers
 - develop a brochure about a career or company to present to the class
- B.12.6 Access information identifying the postsecondary education programs, both in and outside of Wisconsin, leading to careers in the food, fiber, and natural resources industries (see LA C.12.2, C.12.3)
- visit websites of education institutions
 - conduct a panel discussion presenting the strengths of various education institutions
 - develop a brochure about an education institution to present to the class

By the end of grade 12 agricultural students will:

- B.9-12.1 Engage in applied learning opportunities emphasizing technology, information management, and mechanical principles
- B.9-12.2 Continue developing career interests in technology, information, and mechanical applications through a work-based program
- B.9-12.3 Participate actively in community service
- B.9-12.4 Develop advanced leadership skills through participation in FFA

**Note: The standards for agriculture education students in grades 6-12 have been identified in their broadest form in order to provide school districts the opportunity to tailor standards to meet local needs.*

C. LEADERSHIP

Content Standard

Students in Wisconsin will learn about leadership as it affects individuals, organizations, and systems in food, fiber, and natural resources enterprises.

Rationale:

Knowledge of the concepts and processes of leadership and citizenship will assist students in gaining an appreciation of the role leadership plays in shaping individuals, organizations, and society. Effective leadership and human relations skills are critical for personal growth and career success.

PERFORMANCE STANDARDS

By the end of grade 12 students will:

- C.12.1 Demonstrate a working knowledge of leadership and leadership styles (see LA C.12.1, C.12.2, C.12.3, D.12.2; SS C.12.13, E.12.15, E.12.17)
- describe democratic, authoritarian, and situational (contingency) behavioral leadership styles
 - recognize the importance of understanding diversity in people and the need for varied forms of communication
 - discuss the importance of personal leadership development and self-concept development
 - describe the types of individuals who emerge as a group's leader
 - explain the abilities and skills that contribute to leadership
 - identify qualities of successful leaders
 - describe human relations, technical, and conceptual leadership qualities and skills
 - explain learning styles and how they affect leadership abilities
 - identify the importance of ethics in leadership positions
- C.12.2 Practice skills relating to communication, problem-solving, and decision-making through individual, group, and team processes (see LA B.12.1, C.12.1, C.12.2, C.12.3, D.12.2; SS E.12.15)
- demonstrate the goal-setting process
 - demonstrate the relationship between communication and leadership
 - identify ways to adapt individual communication style to various situations
 - employ strategies to improve listening, reading, writing, speaking, and nonverbal communication
 - participate in a public presentation
- C.12.3 Develop leadership skills in club, classroom, or organization settings (see LA C.12.1, C.12.2, C.12.3; SS C.12.10)
- conduct an effective meeting
 - participate in the development of an organization's goals and plan of activities

- C.12.4 Identify the connections between career choices and leadership abilities (see LA 4.12.1; SS C.12.10)
- explain how leadership relates to personal characteristics when considering career interests
 - identify leadership characteristics developed through participation in career development activities such as Supervised Agricultural Experience, State Certified Co-op, and other work-based learning experiences
 - describe the various roles of leaders as employers and employees

By the end of grade 12 agricultural students will:

- C.9-12.1 Engage in applied learning experiences that require using leadership techniques
- C.9-12.2 Continue developing career interests within a work-based program emphasizing leadership skills
- C.9-12.3 Participate actively in community service
- C.9-12.4 Develop advanced leadership skills through participation in FFA

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D. AGRISCIENCE/PRODUCTION

Content Standard

Students will demonstrate an understanding of the scientific principles and societal implications involved in the production and processing of food and fiber as well as in the ornamental horticulture industry.

Rationale:

Students need an understanding of the scientific principles underlying the production of food, fiber, and ornamental plants and the relationship that this has to their daily lives. Knowledge of the concepts of agriscience production and processing will assist students in making informed consumer choices. By learning about the production of food, fiber, and ornamental plants, students understand the impact agriscience makes on their communities and communities throughout the world.

PERFORMANCE STANDARDS

By the end of grade 12 students will:

- D.12.1 Describe the global utilization of Wisconsin's food, fiber, and ornamental plant products (*see SS A.12.5, A.12.7, D.12.2, D.12.3, D.12.13*)
- understand how plants and animals are used differently in different parts of the world
 - identify global distribution patterns of food, fiber, and ornamental plant products produced in Wisconsin
- D.12.2 Discuss the impact that climate and water have on the food, fiber, and ornamental horticulture production cycles throughout the world (*see SC F.12.8, H.12.1; SS A.12.6, A.12.8*)
- D.12.3 Understand how public policy affects the food, fiber, and ornamental plant industries (*see LA A.12.4, F.12.1; SC H.12.1-7; SS A.12.12*)
- cite examples of conflicts between environmentalists and producers of food and fiber
 - discuss the importance of food safety as it relates to the production of food products
 - discuss the impact of state and federal plant and animal marketing regulations as they relate to providing safeguards to the consumer and the industry
- D.12.4 Explore traditional and nontraditional food, fiber, and ornamental horticultural jobs/careers and identify the necessary skills, aptitudes, and abilities (*see SC A.12.5, G.12.1*)
- D.12.5 Describe how biotechnology can enhance food and fiber production (*see SC G.12.3, G.12.5*)
- D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources (*see LA F.12.1; SC B.12.4, C.12.2, G.12.3, G.12.4; SS B.12.9, D.12.4*)

By the end of grade 12 agricultural students will:

D.9-12.1 Engage in applied learning opportunities emphasizing agriscience and production principles

D.9-12.2 Continue developing career interests in agriscience or production agriculture careers through a work-based program

D.9-12.3 Participate actively in community service

D.9-12.4 Develop advanced leadership skills through participation in FFA

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E. ECOLOGY/ENVIRONMENT

Content Standard

Students will understand the relationships between natural resources, ecological processes, and the production and processing of food and fiber.

Rationale:

Land and other natural resources need to be managed in a sustainable manner. Balance and agreement need to occur among producers, processors, manufacturers, scientists and other users of natural resources. Students, as citizens, must learn to make informed choices about their environment based on facts.

PERFORMANCE STANDARDS

By the end of grade 12 students will:

- E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact (see SC G.12.3)
- E.12.2 Analyze benefits, costs, and consequences of land use (see SC G.12.3, H.12.1; SS A.12.12)
 - determine the potential land use for the following using soil maps: food and fiber production; residential, commercial, and industrial development; and, transportation rights-of-way
 - compare and contrast economic and recreational benefits of land use
 - explain, design, and demonstrate projects that can improve wildlife habitat
- E.12.3 Explain the impact of climate change on existing agricultural systems (see SC E.12.1; SS A.12.6)
- E.12.4 Analyze practices used by farmers to reduce erosion and runoff to maintain soil fertility and productivity (see SC H.12.5)
- E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber (see SC F.12.8)
 - evaluate the benefits and risks of different agricultural production and processing methods
 - debate the advantages and disadvantages of chemically produced food and fiber
- E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment (see SC H.12.1)
 - identify methods of producing various food or fiber commodities with sensitivity to the use of renewable and nonrenewable resources
 - explain how organic and inorganic wastes resulting from the production of food and fiber are handled

By the end of grade 12 agricultural students will:

E.9-12.1 Engage in applied learning opportunities emphasizing ecological and environmental principles

E.9-12.2 Continue developing environmental stewardship career interests within a work-based program

E.9-12.3 Participate actively in community service

E.9-12.4 Develop advanced leadership skills through participation in FFA

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F. BUSINESS MANAGEMENT AND MARKETING

Content Standard

Students will learn about the operations and economic impact of agricultural business in a world economy.

Rationale:

People make complex economic choices related to the allocation of food, fiber, and natural resources. The collective role of consumers, producers, and workers directs business and markets to process, add value, and distribute agricultural products as demanded. It is essential that students learn to make informed choices through the study of production, processing, distribution, and consumption of food and fiber.

PERFORMANCE STANDARDS

By the end of grade 12 students will:

- F.12.1 Describe how the production, distribution, and marketing of food and fiber is part of a complex economic system (*see MA A.12.4, A.12.5, SS D.12.2; D.12.10; D.12.13*)
- describe the impact of agriculture on the economy
 - describe interrelationships that exist between local businesses that process or distribute food and fiber items used in their daily lives
 - describe limitations related to the global distribution of food and fiber
 - analyze the way in which supply and demand influence what food and fiber are produced and distributed
 - discuss how national policy affects agricultural business management and marketing at the local, regional, national, and international levels
- F.12.2 Describe the process of marketing food, fiber, and natural resources (*see LA E.12.1, E.12.3*)
- create a marketing plan for the sale of a food, fiber, or natural resource item
 - create an advertisement for an agricultural commodity
 - describe the structure of agricultural businesses (e.g., sole proprietor, partnerships, corporations, and cooperatives)
- F.12.3 Demonstrate basic business and management skills (*see MA A.12.1., A.12.5, B.12.5., F.12.4*)
- construct a profit/loss statement of an agricultural business
 - construct a cash-flow statement for a business
 - construct a net worth statement for a business
 - analyze a budget
 - use information to make a business decision
- F.12.4 Research a career in agricultural business marketing and management (*see LA C.12.1, F.12.1; MA 12.1*)
- research requirements of jobs/careers associated with business management and marketing
 - select an agricultural occupation that is most closely related to personal skills, interest, aptitudes, and abilities
 - defend why a career choice in the food, fiber, and natural resource industry is or is not compatible with personal goals

By the end of grade 12 agricultural students will:

F.9-12.1 Engage in applied learning experiences emphasizing business and management principles

F.9-12.2 Continue developing business and management career interests within a work-based program related to agricultural career opportunities

F.9-12.3 Participate actively in community service

F.9-12.4 Develop advanced leadership skills through participation in FFA

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