

## QUICK REFERENCE: 8<sup>TH</sup> 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 8 students will:

- A.8.1 Explain how geography affects plants and animals raised for food and fiber uses (see SS A.8.1, A.8.4)
- understand and relate the role of how natural resources impact the kinds of food and fiber produced in various regions of the world
  - describe how the climate of a country determines the type of food and fiber products produced
  - compare and contrast the impact weather systems have on food and fiber products produced in the world
- A.8.2 Understand the variety, complexity, and size of the agricultural industry in Wisconsin and the U.S. (see SS D.8.2, D.8.3)
- explore agriculture careers that exist at local, national, and international levels
  - investigate how agriculture careers affect their local and state community
  - understand how food and fiber are distributed nationally
- A.8.3 Explain how the need for food and fiber creates interdependence among cultures and countries (see SS D.8.4, E.8.10, E.8.15)
- identify food and fiber products grown in Wisconsin that are also grown worldwide
  - describe Wisconsin's role in global food production
  - list agricultural products produced in various countries and determine their global use
  - list food and fiber commodities grown in America in quantities sufficient for export and those commodities that must be imported because of insufficient quantities
- A.8.4 Explain how economic and geographic factors affect food selection (see SS D.8.1, D.8.4, D.8.7)
- understand how family income and location affect food purchase options
  - understand how family income influences decisions about food purchased thus affecting the health of the family

**By the end of grade 8 agricultural education students will:**

- A.6-8.1 Engage in applied learning opportunities that focus on the use of plants and/or animals in agriculture
- A.6-8.2 Begin exploring global agricultural system careers through a work-based program
- A.6-8.3 Recognize the importance of community service
- A.6-8.4 Develop leadership skills through participation in FFA

**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 8 students will:**

- B.8.1 Describe the need for data to make decisions (see SC E.8.3; SS D.8.8)
- explain the practical uses of weather forecasting data as it relates to the agriculture industry (e.g., lawn care, landscaping, construction, farming, commodity pricing)
  - plan a class or school store and determine what items might sell best
  - listen to a presentation about career areas in the food and fiber industry
- B.8.2 Understand how technology is affecting the food and fiber industry (see LA C.8.3; SC C.8.8)
- take a field trip to an agribusiness or farm that uses state-of-the-art technology
  - access information about food, fiber, and natural resources to compare the economic implications throughout the U.S. and world
  - access information about precision farming and decisions impacted by the availability of data from Global Positioning Systems (GPS)
  - access information about Integrated Pest Management (IPM), and explain how this technology benefits society
  - explain how technology contributes to food safety
- B.8.3 Access and apply information in the evaluation of natural resource use (see SC G.8.7, H.8.2)
- access and apply information in the study of water pollution causes and remediation (surface water, groundwater)
  - discuss technology applications in wildlife/natural resource management (e.g., radio monitoring devices)
- B.8.4 Understand that trade-offs are made with the adoption of new technologies (see SC G.8.2, G.8.3)
- realize that new technologies require additional training and education
  - explain how getting food from many different places makes people less dependent on weather; however, it increases dependence on transportation and communications
  - identify current technologies that have increased producer efficiencies

**By the end of grade 8 agricultural students will:**

- B.6-8.1 Engage in applied learning opportunities using technology
- B.6-8.2 Begin exploration of technology and information systems careers through a work-based program
- B.6-8.3 Recognize the importance of community service
- B.6-8.4 Develop leadership skills through participation in FFA

## **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 8 students will:**

- C.8.1 Describe the various kinds of leadership and leadership behaviors (see LA C.8.1, C.8.2, C.8.3; SS E.8.2)
- analyze various forms of leadership
  - discuss the contributions of student organizations to leadership development
  - recognize the importance of diversity in people and need for varied forms of communication
  - discuss the importance of personal leadership development
  - describe the types of individuals who emerge as a group's leader
  - identify the importance of ethics in leadership positions
- C.8.2 Identify characteristics of successful leaders (see LA B.8.1, B.12.1, C.8.1, C.8.2, C.8.3, D.8.2)
- explain the relationship between personality types and leadership styles
  - describe human relations, technical, and conceptual leadership qualities and skills
  - explain the relationship between communication and leadership
  - utilize different techniques to improve listening, reading, writing, speaking, and nonverbal communication skills
  - participate in a speaking activity
- C.8.3 Describe responsibilities of various leadership roles within an organization (see LA C.8.1, C.8.2, C.8.3, D.8.2; SS E.8.5, E.8.15; MA A.8.1, B.8.7; SC A.8.4, A.8.5, H.8.2)
- discuss the importance of democratic group leadership
  - demonstrate how to lead a group discussion and involve group members
  - differentiate between the terms "problem," "problem-solving," and "decision-making"
  - demonstrate the goal-setting process
  - participate in the development of an organization's goals and plan of activities
  - participate in an organization's meeting
- C.8.4 Discuss the factors that affect the development of self-concept by noting characteristics of people with a positive self-concept (see LA C.8.1, C.8.3; SS E.8.1, E.8.2)
- describe the characteristics of people with a positive self-concept
  - identify the importance of ethics in leadership positions

### **By the end of grade 8 agricultural students will:**

- C.6-8.1 Engage in applied learning experiences that require using leadership techniques
- C.6-8.2 Begin career exploration within a work-based program where leadership skills are essential
- C.6-8.3 Recognize the importance of community service
- C.6-8.4 Develop leadership skills through participation in FFA

## **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 8 students will:**

- D.8.1 Explain that the food and fiber industry is a complex system of production, processing, marketing, and distribution (see LA A.8.4; SS D.8.3)
- identify food, fiber, and ornamental plants produced in Wisconsin and exported
  - understand the nutritional requirements of plants and animals
  - understand the processing involved with a common food product; such as, pizza, cheeseburger, sub sandwich
  - analyze the impact of food, fiber, and ornamental plant products on their daily life
- D.8.2 Understand the role of natural resources and identify the resources (rivers, groundwater, lakes, forests, farmland) essential to the food, fiber, and the ornamental horticulture industry in Wisconsin (see SC F.8.9; SS A.8.4, A.8.5, D.8.7, D.8.11)
- D.8.3 Understand the basic care of plants and animals (see SC F.8.1, F.8.6, F.8.7)
- D.8.4 Undertake projects that reflect real world agricultural careers; such as, growing plants, small animal care, forestry (see SC G.8.1, G.8.2, G.8.3)
- D.8.5 Compare and contrast various methods of producing food such as conventionally and organically grown food (see LA F.8.1; SC F.8.10)
- D.8.6 Identify potential health concerns resulting from the transmission of diseases between animals and humans (see SC H.8.3)
- D.8.7 Explain the emerging technologies within hydroponics, aquaculture, and biotechnology (see LA F.8.1; SS A.8.10, B.8.9, D.8.4)

**By the end of grade 8 agricultural students will:**

- D.6-8.1 Engage in applied learning opportunities that focus on the use of plants and/or animals in agriculture

D.6-8.2 Begin exploration of careers in agriscience or agricultural production of plants and/or animals through a work-based program

D.6-8.3 Recognize the importance of community service

D.6-8.4 Develop leadership skills through participation in FFA

## **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 8 students will:**

- E.8.1 Explain the components of sustainable agriculture (see SC F.8.8, F.8.9, F.8.10)
- E.8.2 Describe and give examples of how land use impacts the environment (see SS A.8.4)
  - explain how urbanization has impacted native ecosystems
  - explain how agricultural use of land has impacted native ecosystems
  - explain how urbanization has impacted agricultural land
- E.8.3 Understand how climatic conditions affect crops grown regionally (see SC E.8.3; SS A.8.6)
- E.8.4 Explain common soil erosion prevention practices (see SC G.8.5)
- E.8.5 Understand how chemicals affect food production (see SC G.8.3; SS A.8.10)
  - understand the impact of chemicals used in a variety of agricultural practices; such as, conventional, sustainable, minimal till, no till
  - understand the ways that plants and animals may be affected by chemicals
- E.8.6 Describe the impact of food and fiber processing on the environment (see SC G.8.3)
  - identify all the renewable and nonrenewable resources used in the production of a specific food or fiber commodity
  - identify the plant and animal wastes that result from the food and fiber industry and suggest uses for the waste
  - evaluate the impact of food and fiber processing on water supply and water quality of both groundwater and surface water

**By the end of grade 8 agricultural students will:**

- E.6-8.1 Engage in applied learning opportunities that focus on the use of plants and/or animals in agriculture
- E.6-8.2 Begin exploration of environmental careers that work closely with the agricultural system through a work-based program
- E.6-8.3 Recognize the importance of community service
- E.6-8.4 Develop leadership skills through participation in FFA

**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 8 students will:**

- F.8.1 Explain how food, fiber, and natural resources are part of a global economy (see MA A.8.1, E.8.1; SS D.8.3)
- identify food, fiber, and natural resource items used in their daily lives
  - identify local, regional, national, and international entities that process and distribute food and fiber, and categorize them under the headings of processor, wholesaler, or retailer
  - identify the businesses that are involved in getting food and natural resource items from where they are produced or processed to where they are consumed
  - explain the distribution of money within the marketing of a product from production to consumer
- F.8.2 Recognize that agricultural businesses produce, process, transport, and sell food, fiber, and natural resources to make a profit (see MA A.8.1, B.8.7, E.8.1, E.8.4; SS D.8.8)
- compare the wants and needs of consumers to the cost and production levels of food, fiber, and natural resource items
  - calculate the value of agricultural commodities found on a typical farm
- F.8.3 Inventory personal interests and abilities to plan for a potential occupation in an agricultural business (see LA F.8.1)
- identify the people/careers involved in processing and distributing food and fiber from the raw products to the consumer
  - determine skills, abilities, and interests required of people involved in processing and distributing food and fiber from the raw products to the consumer
  - compare requirements of jobs/careers associated with food, fiber, and natural resources with their own interests and abilities

**By the end of grade 8 agricultural students will:**

- F.6-8.1 Engage in applied learning experiences that require using the principles of management and marketing related to agricultural systems
- F.6-8.2 Begin exploration of management and marketing careers through a work-based program
- F.6-8.3 Recognize the importance of community service
- F.6-8.4 Develop leadership skills through participation in FFA