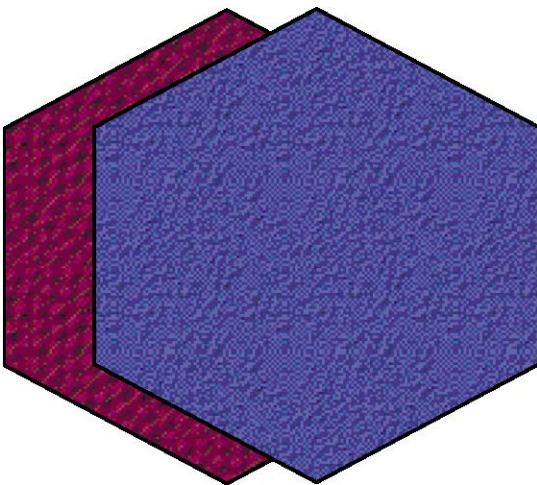


**Iowa**

**CONTENT  
STANDARDS and  
BENCHMARKS**

**Agricultural  
Education**



**1999**

Academic	Employability	Career Area Knowledge and Skills	Occupational Cluster	Career and Technical Programs Specific Technical Knowledge and Skills					
			Swine Production						
			Landscaping						
			Ag Chemicals Application Management						
			Agriculture Mechanics Parts and Service Technology						
			Food Manufacturing						
			Natural Resources Conservation						

Academic	Employability	Career Area Knowledge and Skills	Occupational Cluster	Career and Technical Programs Specific Technical Knowledge and Skills	Illustration of Program Possibilities
				Swine Production	
				Agriculture Production Management	
				Landscaping	
				Turf Management	
				Horticulture Science	
				Arboriculture	
				Floriculture	
				Ag Chemicals Application Management	
				Agriculture Marketing	
				Agriculture Business and Production	
				Agriculture Economics	
				Agriculture Power Technology	
				Agriculture Mechanics Parts and Service Technology	
				Food Services and Technology	
				Food Manufacturing	
				Food Marketing	
				Natural Resources Conservation	
				Renewable Natural Resources	
				Forestry Sciences	
				Natural Resource Management	

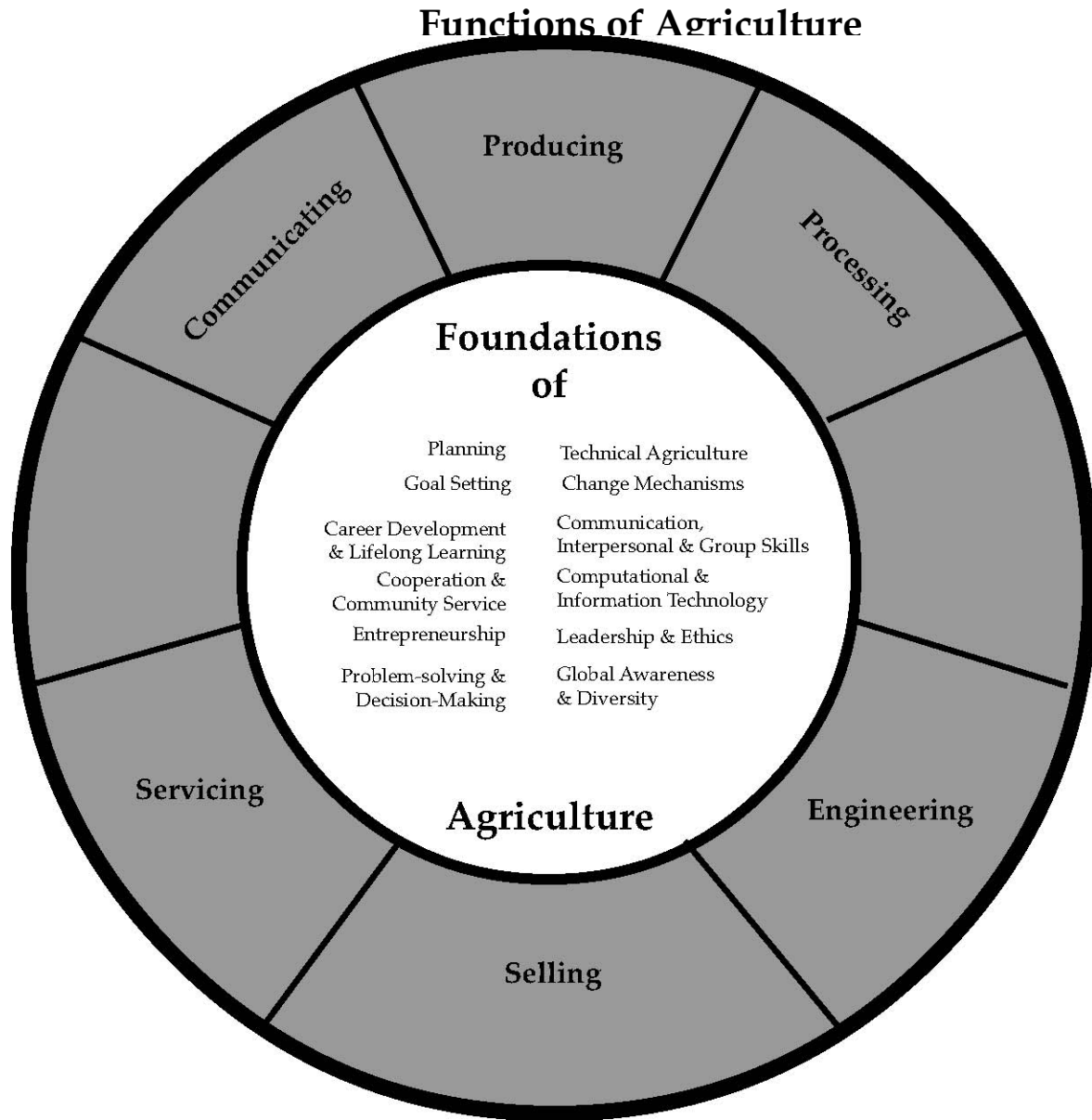
← K-14 →

# **The Agriculture Occupations Curriculum**



This flow chart describes how the agriculture curriculum can be viewed as a continuum that begins in the primary grades with career awareness and exploration. The model continues through postsecondary education with the emphasis becoming more specialized to the student's individual interest in agriculture occupations.

# Curriculum Framework for Agriculture



**Academic concepts • Technology**

# **Standards and Benchmarks for Agricultural Production (All career oriented and gender fair)**

## **Standard I: Understand problem-solving, analysis, and decision-making in agriculture.**

### *Benchmarks*

Analyze situation, use problem-solving approach and make appropriate decisions.

- 1 Analyze the economic impact of production agriculture on the economy.
- 2 Identify and compare the operation of equipment and facilities involved with livestock for optimum production efficiency.
- 3 Compare agronomic production systems.
- 4 Adjust and calibrate agriculture equipment.
- 5 Recognize the use of ultrasound in decision-making.
- 6 Recognize the use of electronic ID system in decision-making.
- 7 Describe the value of computerized record keeping for decision-making.

## **Standard II: Understand leadership and ethics development in agriculture.**

### *Benchmarks*

Apply principles of leadership and ethical behavior to selected situations in agriculture.

- 1 Recognize relevant, ethical issues in business.
- 2 Demonstrate initiative.
- 3 Analyze components of labor management.
- 4 Delegate duties.
- 5 Manage Conflict (personal and customer).
- 6 Become personally involved in a professional organization.
- 7 Take responsibility for mistakes and/or good work.
- 8 Manage time effectively.

## **Standard III: Understand the concept of cooperation and community service/ teamwork.**

### *Benchmark*

Demonstrate cooperation and teamwork skills.

1. Identify the impact of positive community relations through communications, business appearance and practices in addition to personal involvement in related professional organizations.
2. Respect the property of others.
3. Follow directions.
4. Interact with others in a courteous and tactful manner.
5. Cooperate with others.
6. Work effectively with others.

7. Facilitate group interaction (teamwork).
8. Explain the relationship between public and private sectors.
9. Follow rules and regulations.
10. Accept supervision willingly.
11. Develop positive community relations.
12. Ask for help when needed.
13. Comply with safety and health rules.
14. Utilize equipment correctly as shown/demonstrated by supervisor.

#### **Standard IV: Understand the use of entrepreneurial knowledge and skills in agriculture.**

##### *Benchmark*

Use appropriate communication skills in a variety of occupational situations in agriculture.

1. Explain types of business ownership.
2. Identify factors in obtaining finances for a new business.
3. Demonstrate the ability of market analysis.
4. Analyze present and future business resource base.
5. Identify necessary financial components for a production agricultural business.
6. Identify risk components and analyze management strategies.
7. Develop and implement a business plan for crop/animal production.
8. Explain the concept of competition.
9. Analyze the concept of supply and demand.
10. Explain the concept of organized labor and business.
11. Explain the concept of business cycles.
12. Analyze business organizations.
13. Identify skills required of a business owner.
14. Explain the concept of profit.
15. Identify the personal characteristics of entrepreneurs.
16. Analyze the contents of a business plan.

#### **Standard V: Understand the use of communication skills in agriculture - interpersonal and group; written and oral.**

##### *Benchmark*

Use appropriate communication skills in a variety of occupational situations in agriculture.

1. Lead a discussion.
2. Speak effectively in front of others.
3. Listen effectively.
4. Organize thoughts and clearly express point of view.
5. Organize thoughts and write clearly.
6. Demonstrate proper telephone etiquette.

## **Standard VI: Understand the principles of goal setting - personal and organizational**

### *Benchmark*

Explain the goal setting process.

- 1 Define goals.
- 2 Determine personal attitude toward business risk.

## **Standard VII: Understand the principles of planning.**

### *Benchmark*

Apply planning strategies in agriculture production.

- 1 Analyze components involved in contracting services for the product of an agricultural business.
- 2 Identify components needed for appropriate tax information.
- 3 Determine marketing systems, methods, and strategies.
- 4 Plan an animal health program/schedule.
- 5 Prioritize a series of tasks.
- 6 Utilize time effectively.
- 7 Organize an event.
- 8 Recognize the importance of technical assistance.
- 9 Work within guidelines.

## **Standard VIII: Understand the concept of adapting to change in agriculture.**

### *Benchmark*

Develop strategies to effectively adapt to new situations and rapid changes in agriculture.

- 1 Adapt to change/demonstrate flexibility.
- 2 Accept new challenges.
- 3 Utilize past, current, and future trends to analyze and interpret charts, graphs, and other information to develop management decisions.
- 4 Adapt to environment/situation.

## **Standard IX: Understand global and cultural diversity issues.**

### **(G/MC/GF)**

### *Benchmark*

Demonstrate a working knowledge of the relationship between global/cultural diversity and occupational success in agriculture.

- 1 Explain the nature of international trade.
- 2 Identify domestic and global niche markets and analyze the production requirements.
- 3 Accept individual difference.

## **Standard X: Understand basic computational and informational technology.**

### *Benchmark*

Apply computational and informational technologies to analyze and solve mathematical problems.

- 1 Evaluate and demonstrate use of current technology in land surveying and measuring.
- 2 Utilize digitized soil surveys to establish a soil sampling methods and formulate a nutrient.
- 3 Utilize computerized record analyze in making production, management and marketing decisions.
- 4 Show awareness of various forms of electronic communication: e-mail, ftp, Worldwide Web.
- 5 Describe basic hardware components.
- 6 Use the following hardware components: keyboard, mouse, disk drive, monitor.
- 7 Explain the operating system of a computer.
- 8 Use an operating system to: open or chose programs, list files or program and file management.

## **Standard XI: Understand the concept of career development and improvement - lifelong learning.**

### *Benchmark*

Develop strategies to make a successful transition from school to work.

1. Identify career opportunities in production ag.
2. Complete the course work for current and evolving certification or licensure requirements in production agriculture.
3. Identify skills, physical and emotional requirements for job. Complete required forms.
5. Construct an application letter.
6. Evaluate job offer, benefits, time, and working environment.
7. Exhibit dependability and responsibility on the job.
8. Demonstrate punctuality.
9. Compose a resume.
10. Demonstrate personal hygiene and cleanliness.
11. Produce quality work.

## **Standard XII: Understand basic technical skills and knowledge in the occupational area of production agriculture.**

### *Benchmark*

Apply technical skills in a hands-on experiential setting in agriculture.

1. Explain practices to ensure food safety for the consumer.
2. Follow procedures in identification, handling and disposal of hazardous materials.
3. Identify basic laws and governmental regulations related to agricultural production.
4. Analyze the environmental effect that agricultural stewardship may have on surface and ground water, wildlife, soil, air, and people.

5. Demonstrate safe and humane animal handling techniques.
6. Identify major genetic characteristics of animal breeds and plant varieties.
7. Evaluate agricultural product quality.
8. Analyze various animal testing programs.
9. Repair/condition/service agricultural equipment.
10. Identify components of water systems.
11. Demonstrate knowledge of safe and proper operation of tools and equipment.
12. Demonstrate carpentry skills needed in agriculture.
13. Demonstrate welding and cutting skills.
14. Demonstrate and calculation, forming, placing, and finishing of concrete.
  
15. Identify and evaluate various energy and power sources.
16. Evaluate various animal feeding programs including ration development and feedstuff analysis.
17. Plan an animal health program/schedule with emphasis toward quality assurance.
18. Identify major genetic characteristics of animal breeds (including hybrids) and examine their uses in animal breeding systems and scientific principles.
19. Explain soil and water conservation practices and their part in federal program compliance.
20. Explain the factors involved with seed and plant selection.
21. Identify and demonstrate plant growth and reproduction.
22. Identify and select biological and chemical pest controls for agronomic production.
23. Design storage establishment improvement practices/grazing systems.
24. Identify and compare the operation of grain harvesting, handling, drying, and storage systems.
25. Maintain clean and orderly work area.
26. Show awareness of the tools of precision farming.
27. Describe the importance of graphic information systems in precision farming.
28. Describe the role of graphic information systems in precision farming.
29. Describe the role of VRT in precision farming.
30. Describe the value of precision farming in agriculture.
31. Use the graphic information system receiver to record a coordinate position of some point.
32. List specific objects that can be mapped.
33. Recognize what a coordinate system is.
34. Use the survey plat of township, range and section to describe an area.
35. Define precision farming.
36. Show awareness of relationships between mapped objects.
37. List specific biotechnology products in use.
38. Recognize the concept of DNA.
39. Describe the role DNA plays in an animal's phenotype.
40. Define phenotype and genotype.
41. Show awareness of processes of biotechnology: fingerprinting, transformation and extraction.
42. Use e-mail to send a message.
43. Use the Worldwide Web to find information.
44. Describe value of technology in livestock production and in management.

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