



High School

National FFA Organization

Lesson HS.31

UNDERSTANDING CAREER CLUSTERS

Unit.

Stage One of Development—ME

Problem Area.

How Do I Begin to Grow?

Precepts.

Definition of Technical/Functional

National Standards.

NSS-EC.9-12.15 — Investment — Under stand economic growth creates new employment and profit opportunities in some industries, but growth reduces opportunities in other industries.



Student Learning Objectives. As a result of this lesson, the student will ...

- 1 Define career clusters.
- 2 List the career pathways for agriculture, food and natural resources.



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Time. Instruction time for this lesson: 50 minutes.



Resources

Career Cluster Resources, 2002
www.careerclusters.org



Tools, Equipment, and Supplies

- ✓ Transparencies—HS.31.TM.A–H
- ✓ Overhead Projector
- ✓ HS.31.Assess—one per student



Key Terms. The following term is presented in this lesson and appears in bold italics:

- ▶ Career clusters



Interest Approach

List the following categories on the writing surface: Agriculture, Technology, Education, Finance, Marketing, Human Services, and Health Science. You will have students participate in a Hieroglyphics Moment to represent the career areas that you listed on the writing surface.



As we grow older, many of us begin to explore different career fields. Each of these fields is filled with different career opportunities. Now is the time to start the search that will lead you to success! Listed on the board are eight broad career fields. When I say "Draw it," choose one and draw a large icon that represents that area. Under that icon draw at least six other smaller icons indicating jobs that are related to that career field. An example may be under the Education career field, we may draw an icon for a teacher and another for principal. Ready? Draw!

When the students are done, have them switch papers with a partner and have the partner try to label what the icon represents. Once this is complete, discuss some of the career clusters with the entire class and initiate a discussion on career clusters.



Now that we have our icons drawn, a partner is going to label our icons. Trade papers with the student next to you and try to figure out what career field and careers the icons represent.

Call on a few students to describe the icons they drew and list the career field.



Who will share their icons and career cluster with the class? Just as we all drew and listed on our papers, career fields are filled with endless career possibilities. Throughout today's lesson we are exploring these things called career clusters and really focus our attention on the agricultural career cluster.



SUMMARY OF CONTENT AND TEACHING STRATEGIES

Objective 1. Define career clusters.



Ask yourself these questions: Why is it helpful to group different careers together in these fields? What can they help you do? Let's get some responses from the group. *Elicit responses*



The career fields are actually called career clusters. Let's transfer a quick definition of this term into our notes.

Have students copy HS.31.TM.A in their notebook.

I. Define career clusters.

A. What are career clusters.

1. **Career clusters** represent a grouping of occupations and broad industries based on commonalities.

B. Why career clusters?

1. Tomorrow's jobs require more knowledge, more understanding of technology, and more flexible workers.
2. Tomorrow's workers need to be prepared to change jobs, update knowledge, adapt, and understand the big picture.



Looking at career clusters early is a must in today's society. Employers want employees that are flexible and can handle multiple tasks in a particular career cluster. Exploring early allows us to become knowledgeable in areas important to our future career field.

Objective 2.



Now that we understand what career clusters are, let's take an in depth look at where they can take us. Let's tear apart the Agriculture, Food, and Natural Resources Career Cluster.

List the career pathways for agriculture, food, and natural resources on a writing surface: Food Products and Processing Systems, Plant Systems, Animal Systems, Power, Structural & Technical Systems, Natural Resource Systems, Environmental Service Systems, and Agribusiness Systems. Divide the class into seven groups. Name each group one of seven career paths. Have students brainstorm in their group different careers in the path. Once they have completed this, call on each group to list the careers they came up with.



Let's take an even deeper look into what career clusters contain. If we were to take a journey down one of these seven paths in the Agriculture, Food, and Natural Resources career cluster, what careers would we find in each? When I say "List it" take four minutes to make a list of jobs related to your given career path. For example, in Plant Systems, I may write the jobs botanist and florist. Oh—by the way, we can do this in small groups. I will assign a career path to each group.

Assign each group a career path.



Ready? List it! *Allow students to work for about five minutes. Walk by each group and help to initiate ideas.*

Now use HS.31.TM.B, HS.31.TM.C, HS.31.TM. D, HS.31.TM.E, HS.31.TM.F, HS.31.TM.G, and HS.31.TM.H to compare to the list students created. Have a discussion on each pathway and have students copy the transparencies in their notebook.





Let's compare our lists to another list of careers associated with the Agriculture, Food, and Natural Resources career paths. When your group is called on, have a spokesperson read off your list to the class. Copy the transparencies that we go over into your notebook.

II. Career Pathways

A. Food Products and Processing Systems

1. Agricultural Sales.
2. Agricultural Communications Specialists.
3. Business-Educators.
4. Food Scientists
5. Meat Processors.
6. Biochemists.
7. Food Brokers-Inspectors.
8. Meat Researchers.
9. Food Meal Supervisors.
10. Cheese Makers.
11. Food and Fiber Engineers.
12. Bioengineers.
13. Food Processors.
14. Quality Control Specialist.

B. Plant Systems

1. Plant Breeders and Genetics.
2. Biotechnology Lab Technology.
3. Soil and Water Specialist.
4. Crop Farm Manger.
5. Agricultural Educators.
6. Plant Pathologist.
7. Sales Representative.
8. Tree Surgeons.
9. Commodity Marketing Specialist.
10. Forest Genetics.
11. Growers/Farmers/Greenhouse Managers.
12. Golf Course Superintendents.

C. Animal Systems

1. Agricultural Educators.
2. Livestock Producers.
3. A.I. Technicians.
4. Animal Caretakers/Poultry Managers.
5. Veterinarians.
6. Embryo Technologist.
7. Livestock Buyers.
8. Wildlife Biologist.
9. Animal and Dairy Inspectors.
10. Animal Health Salesperson.
11. Livestock Geneticists.
12. Reproductive Physiologists.
13. Pet Shop Operators.



D. Power, Structural & Technical Systems

1. Machine Operators.
2. Electronics System Technicians.
3. Agricultural Engineers.
4. Heavy Equipment Maintenance.
5. Wastewater Treatment Plant Operators.
6. Welders.
7. Machinist.
8. Communication Technicians.
9. Software Developer/Programmer.
10. Computer Technicians.

E. Natural Resource Systems

1. Wildlife Managers.
2. Ecologists.
3. Park Managers.
4. Fish and Game Officers.
5. Loggers.
6. Forest Technicians.
7. Geologist.
8. Hydrologists.
9. Fish Hatchery Manager.
10. Commercial Fisherman.

F. Environmental Service Systems

1. Pollution Prevention and Control Mangers.
2. Environmental Sampling and Analysis Scientists.
3. Health and Safety Sanitarians.
4. Hazardous Materials Handlers.
5. Hazardous Materials Technician.
6. Water Environment Managers.
7. Water Quality Managers.
8. Toxicologists.
9. Recyclers.
10. Solid Waste Specialists.

G. Agribusiness Systems

1. Salesperson.
2. Sales Manager.
3. Banker/Loan Officer.
4. Field Representative for Bank.
5. Farm Investment Manager.
6. Agricultural Commodity Broker.
7. Agricultural Economist.
8. Farmer/Rancher/Feedlot Owner.



9. Agricultural Products Buyer.
10. Animal Health Products Distributor.



Review/Summary

Have students identify which career they are most, somewhat, and least interested in. Explain how they most likely in the same career paths. Reinforce how those positions within a career path and specific career paths will show them more options to look at when choosing a potential career.



Now that we have seen the enormous amount of job possibilities there are in the Agriculture, Food, and Natural Resources Career Cluster, let's take a look at what potential jobs may interest each of us. Using your pen, circle the top five careers that are most interesting to you. Place a checkmark beside five careers that you would like to find more information about. Place an X beside five careers that you would never want to try.

Isn't it interesting how most of our careers that people like are in the same pathway? What do you think that says to us and about the other career options in those career paths?

Elicit responses and summarize.



Application

►Extended Classroom Activity:

Have the guidance counselor speak on careers.

►FFA Activity:

Have students review the list of career development events that may help them to develop their skills. Have them choose and participate in a CDE that will help to enhance their skills.

►SAE Activity:

Have the students participate in an internship or job shadow with local agricultural businesses. They should use this opportunity to become familiar with job diversity and learn the importance of agricultural careers.



Evaluation

Students will complete HS.31.Assess.

Answers to Assessment:

1. A grouping of occupations and broad industries based on commonalities.
2. Tomorrow's jobs require more knowledge, more understanding of technology, and more flexible workers. Tomorrow's workers need to be prepared to change jobs, update knowledge, adapt, and understand the big picture.
3. Food Products and Processing Systems
 - Plant Systems
 - Animal Systems
 - Power, Structural & Technical Systems
 - Natural Resources Systems



Environmental Service Systems

Agribusiness Systems

4. Grade on the depth of the answer. Use rubric.

Clarity—10pts.

Ag. Career chosen—10pts.

Explained why—10pts.



UNDERSTANDING CAREER CLUSTERS

1. Define career clusters.
2. Why are career clusters important.
3. List the seven career pathways in agriculture, food and natural resources.
4. If you chose an agricultural career, what would it be and why.



DEFINE CAREER CLUSTERS

◆ What are career clusters.

→ Career clusters represent a grouping of occupations and broad industries based on commonalities.

◆ Why career clusters.

→ Tomorrow's jobs require more knowledge, more understanding of technology, and more flexible workers.

→ Tomorrow's workers need to be prepared to change jobs, update knowledge, adapt, and understand the big picture.



CAREER PATHWAYS— FOOD PRODUCTS AND PROCESSING SYSTEMS

- ◆ **Agricultural Sales**
- ◆ **Agricultural Communications Specialists**
- ◆ **Business-Educators**
- ◆ **Food Scientists**
- ◆ **Meat Processors**
- ◆ **Biochemists**
- ◆ **Food Brokers-Inspectors**
- ◆ **Meat Researchers**
- ◆ **Food Meal Supervisors**
- ◆ **Cheese Makers**
- ◆ **Food and Fiber Engineers**
- ◆ **Bioengineers**
- ◆ **Food Processors**
- ◆ **Quality Control Specialist**



CAREER PATHWAYS— PLANT SYSTEMS

- ◆ **Plant Breeders and Genetics**
- ◆ **Biotechnology Lab Technology**
- ◆ **Soil and Water Specialist**
- ◆ **Crop Farm Manager**
- ◆ **Agricultural Educators**
- ◆ **Plant Pathologist**
- ◆ **Sales Representative**
- ◆ **Tree Surgeons**
- ◆ **Commodity Marketing Specialist**
- ◆ **Forest Genetics**
- ◆ **Growers/Farmers/Greenhouse Managers**
- ◆ **Golf Course Superintendents**



CAREER PATHWAYS— ANIMAL SYSTEMS

- ◆ **Agricultural Educators**
- ◆ **Livestock Producers**
- ◆ **A.I. Technicians**
- ◆ **Animal Caretakers/Poultry Managers**
- ◆ **Veterinarians**
- ◆ **Embryo Technologist**
- ◆ **Livestock Buyers**
- ◆ **Wildlife Biologist**
- ◆ **Animal and Dairy Inspectors**
- ◆ **Animal Health Salesperson**
- ◆ **Livestock Geneticists**
- ◆ **Reproductive Physiologists**
- ◆ **Pet Shop Operators**



CAREER PATHWAYS— POWER, STRUCTURAL & TECHNICAL SYSTEMS

- ◆ **Machine Operators**
- ◆ **Electronics System Technicians**
- ◆ **Agricultural Engineers**
- ◆ **Heavy Equipment Maintenance**
- ◆ **Wastewater Treatment Plant Operators**
- ◆ **Welders**
- ◆ **Machinist**
- ◆ **Communication Technicians**
- ◆ **Software Developer/Programmer**
- ◆ **Computer Technicians**



CAREER PATHWAYS— NATURAL RESOURCE SYSTEMS

- ◆ **Wildlife Managers**
- ◆ **Ecologists**
- ◆ **Park Managers**
- ◆ **Fish and Game Officers**
- ◆ **Loggers**
- ◆ **Forest Technicians**
- ◆ **Geologist**
- ◆ **Hydrologists**
- ◆ **Fish Hatchery Manager**
- ◆ **Commercial Fisherman**



CAREER PATHWAYS— ENVIRONMENTAL SERVICE SYSTEMS

- ◆ **Pollution Prevention and Control Mangers**
- ◆ **Environmental Sampling and Analysis Scientists**
- ◆ **Health and Safety Sanitarians**
- ◆ **Hazardous Materials Handlers**
- ◆ **Hazardous Materials Technicians**
- ◆ **Water Environment Managers**
- ◆ **Water Quality Managers**
- ◆ **Toxicologists**
- ◆ **Recyclers**
- ◆ **Solid Waste Specialists**



CAREER PATHWAYS— AGRIBUSINESS SYSTEMS

- ◆ **Salesperson**
- ◆ **Sales Manager**
- ◆ **Banker/Loan Officer**
- ◆ **Field Representative for Bank**
- ◆ **Farm Investment Manager**
- ◆ **Agricultural Commodity Broker**
- ◆ **Agricultural Economist**
- ◆ **Farmer/Rancher/Feedlot Owner**
- ◆ **Agricultural Products Buyer**
- ◆ **Animal Health Products Distributor**

