



Middle School

National FFA Organization

Lesson MS.28

OPPORTUNITIES IN AGRICULTURE, FOOD AND NATURAL RESOURCES

Unit.

Stage One of Development—ME

Problem Area.

What Foundational Skills Do I Need for Career Success?

Precepts.

N4: Choose a career based on passion, abilities, and aptitudes

National Standards.

NL-ENG.K12.8 - Students use a variety of technological and information resources to gather and synthesize information and to create and communicate knowledge.



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

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



© 2004 National FFA Organization
It is illegal to reproduce copies of this material
without written permission from the National FFA Organization.
National FFA Organization





Time. Instruction time for this lesson: 50 minutes.



Resources

Career Cluster Resources, 2002. www.careerclusters.org



Tools, Equipment, and Supplies

- ✓ Overhead projector
- ✓ MS.28.TM.A
- ✓ MS.28.TM.B
- ✓ MS.28.TM.C
- ✓ MS.28.TM.D
- ✓ MS.28.TM.E
- ✓ MS.28.TM.F
- ✓ MS.28.TM.G
- ✓ MS.28.Assess—one per student



Key Terms. The following terms are presented in this lesson and appear in bold italics:

None provided



Interest Approach

Make a statement to the class that reviews yesterday's lesson, MS.27, and ties into today's lesson. Have a piece of pizza or a picture of pizza ready to show the class.



Students, think about the last time you ate hot, fresh, delicious pizza. As you ate that pizza, did it ever cross your mind as to the number of careers involved in producing and marketing that pizza? Your goal is to list at least ten careers involved in producing this pizza and be ready to share with the class. When I say, "GO", take two minutes to list these careers. What questions do you have? GO!

Have student's call out two of the careers they recorded. As they respond, write the responses on the writing surface. Group the responses in categories, such as the career pathways in this lesson.



Now that you have the careers listed, share them with the class. When your name is called, give me two of the careers you recorded. Did you ever think the production of one pizza involved this many careers?

As we go through today's lesson, think about the diversity of agriculture and its importance. Agriculture has something to offer each and every one of us. We will now take a look at the seven career pathways that pertain to agricultural opportunities.



SUMMARY OF CONTENT AND TEACHING STRATEGIES

Objective 1. List the career pathways for agriculture, food, and natural resources.

Divide the class into seven groups. Name each group one of seven career paths. Within their groups, have students brainstorm different careers in the pathway. Everyone in the group is record the responses so they can share them.



Students, we will now look at the seven agricultural career pathways. I will assign a career path to you and you are to list jobs related to this career path. To accomplish this, you will be divided into seven groups. Each of you are to work with your group to list as many jobs as you can that relate to your assigned career path. Everyone in the group is to record the career ideas generated. You will have 5 minutes to complete this activity. What questions do you have? Begin.

Allow students to work for about five minutes. Walk by each group and help initiate ideas. When time is up provide each group with a paper copy of the transparency (MS.28.TM.A, MS.28.TM.B, MS.28.TM.C, MS.28.TM.D, MS.28.TM.E, MS.28.TM.F, and MS.28.TM.G) that relates to their assigned group. (Example: MS.28.TM.A for the Food Products and Processing Systems Group). Instruct each group to compare the information contained on the transparency with the career list they created. If groups come up with careers that are not listed on the transparency but will fit the career path, have them add these to the sheet. If they come up with careers that do not fit the career path, tell them to save these for later discussion to see if they fit another career path. Have student's hand the transparency copies back to you.



Now that you have had time to create a career list, I will give each group a paper relating to your assigned career path. It has sample careers for that path. Compare your list with the list on the paper. If your group came up with careers not listed but fit the career path, add them to the sheet. If you came up with careers that you feel don't fit the career path, save them for our discussion and see if they fit another career path. You have two minutes to complete this. When finished, I will collect the career path papers. What questions do you have? Begin.

Have a discussion on each pathway. Initiate the discussion by using a Picasso Moment. Each group is to select two careers from their assigned career pathway. When called upon, representatives from the group will draw a picture of each of the two careers and show the rest of the class. The class is then to guess what career the picture represents. After students have guessed the career area, show the transparency for the career path and have students copy the information presented in their notebooks.



Before I collect the career path transparency sheets, select two careers. Using a clean sheet of paper, draw a picture representing each of the career areas. When I call on your group, you are to have a representative show the class your picture. The class will guess what the career is. We will do this with each career path. You will need to copy in your notebooks the information from the transparencies that we go over.

Once students have selected the careers to draw, collect the copies of the transparency sheets from each group. When you present each transparency, consider adding careers that each group came up with that are not listed on the transparency.

Time permitting, you may ask for other career suggestions for each pathway that were not thought of by the assigned group or relate them to careers in the local community.

I. Career Pathways

Show MS.28.TM.A.

- 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 Specialists



Show MS.28.TM.B.

B. Plant Systems

1. Plant Breeders and Geneticists
2. Biotechnology Lab Technologists
3. Soil and Water Specialists
4. Crop Farm Managers
5. Agricultural Educators
6. Plant Pathologists
7. Sales Representatives
8. Tree Surgeons
9. Commodity Marketing Specialists
10. Forest Geneticists
11. Growers, Farmers, and Greenhouse Managers
12. Golf Course Superintendents

Show MS.28.TM.C.

C. Animal Systems

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

Show MS.28.TM.D.

D. Power, Structural, and Technical Systems

1. Machine Operators
2. Electronics System Technicians
3. Agricultural Engineers
4. Heavy Equipment Maintenance People
5. Wastewater Treatment Plant Operators
6. Welders
7. Machinists
8. Communication Technicians
9. Software Developers and Programmers
10. Computer Technicians



Show MS.28.TM.E.

E. Natural Resources Systems

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

Show MS.28.TM.F.

F. Environmental Service Systems

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

Show MS.28.TM.G.

G. Agribusiness Systems

1. Salespeople
2. Sales Managers
3. Bankers and Loan Officers
4. Field Representatives for Bank
5. Farm Investment Managers
6. Agricultural Commodity Brokers
7. Agricultural Economists
8. Farmers, Ranchers, Feedlot Owners
9. Agricultural Products Buyers
10. Animal Health Products Distributors



Review/Summary

Using a Hieroglyphics Moment, instruct students to draw icons or small pictures representing each of the seven career paths. Allow them to share their hieroglyphics with another student and have each of them guess which career areas each picture represents.

If time permits, you could also have students do the following activity: Have students write down on a sheet of paper their favorite food. Have them write every job required to get that food to their table. Allow them to share this with another student and compare and complete the list of jobs they compiled for their favorite food.

Application

►Extended Classroom Activity:

Take students to visit an agricultural business to explore the diverse job options. This will allow them to see how broad the career pathways can be, just by viewing one agricultural business.

►FFA Activity:

Students should review the list of career development events that may help them develop their skills. Have them choose a CDE and participate in the event.

►SAE Activity:

Students should participate in an internship or job-shadow with local agricultural businesses. During the internship, they should try to learn as much about the career as possible. This will assist students in making important career decisions.

✓ Evaluation

Students will complete test MS.28.Assess.

Answers to Assessment:

1. Food Products and Processing Systems
Plant Systems
Animal Systems
Power, Structural, and Technical Systems
Natural Resources Systems
Environmental Service Systems
Agribusiness Systems

2. Grade on the depth of the answer, using rubric.
Clarity-10pts.
Ag. Career chosen-10pts.
Explained why-10pts. Ag.
Career chosen—10pts.
Explained why—10pts.



OPPORTUNITIES IN AGRICULTURE, FOOD AND NATURAL RESOURCES

1. List the seven career pathways in agriculture, food, and natural resources.

2. If you chose an agricultural career, what would it be and why.



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 Specialists**



PLANT SYSTEMS

- ◆ **Plant Breeders and Geneticists**
- ◆ **Biotechnology Lab Technologists**
- ◆ **Soil and Water Specialists**
- ◆ **Crop Farm Managers**
- ◆ **Agricultural Educators**
- ◆ **Plant Pathologists**
- ◆ **Sales Representatives**
- ◆ **Tree Surgeons**
- ◆ **Commodity Marketing Specialists**
- ◆ **Forest Geneticists**
- ◆ **Growers, Farmers, Greenhouse Managers**
- ◆ **Golf Course Superintendents**



ANIMAL SYSTEMS

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



POWER, STRUCTURAL, AND TECHNICAL SYSTEMS

- ◆ **Machine Operators**
- ◆ **Electronics System Technicians**
- ◆ **Agricultural Engineers**
- ◆ **Heavy Equipment Maintenance People**
- ◆ **Wastewater Treatment Plant Operators**
- ◆ **Welders**
- ◆ **Machinists**
- ◆ **Communication Technicians**
- ◆ **Software Developers/Programmers**
- ◆ **Computer Technicians**



NATURAL RESOURCES SYSTEMS

- ◆ **Wildlife Managers**
- ◆ **Ecologists**
- ◆ **Park Managers**
- ◆ **Fish and Game Officers**
- ◆ **Loggers**
- ◆ **Forest Technicians**
- ◆ **Geologists**
- ◆ **Hydrologists**
- ◆ **Fish Hatchery Managers**
- ◆ **Commercial Fishermen**



ENVIRONMENTAL SERVICE SYSTEMS

- ◆ **Pollution Prevention and Control Managers**
- ◆ **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**



AGRIBUSINESS SYSTEMS

- ◆ **Salespeople**
- ◆ **Sales Managers**
- ◆ **Bankers and Loan Officers**
- ◆ **Field Representatives for Bank**
- ◆ **Farm Investment Managers**
- ◆ **Agricultural Commodity Brokers**
- ◆ **Agricultural Economists**
- ◆ **Farmers, Ranchers, Feedlot Owners**
- ◆ **Agricultural Products Buyers**
- ◆ **Animal Health Products Distributors**

