GPS
FOR SUCCESS
Navigate Your Career Path to a Bright Future ℠

Agriculture, Food, & Natural Resources

Career Cluster Teacher Guide

Resource Description

> Ninety seven percent of U.S. farms are family-owned. Many of these farms are high-tech, multi-million-dollar operations. They invest heavily in local economies and provide many, many jobs for the local people, including computer specialists, HR managers, equipment repair specialists, food processors, and veterinarians. In addition, interest in the protection, improvement, cultivation, and management of our natural resources provides careers in forestry, logging, and water and soil conservation.

Materials and Resources

- Teacher guide
- http://mygpsforsuccess.com/agriculture-food-and-natural-resources/
- Cluster student viewing guide
- KWL Chart
- Display paper or individual sheets
- Pen/Pencil
- 1:1 computer or laptops; or group students if limited resources

Vocabulary & Definitions

<u>Agriculture:</u> deliberate modification of Earth's surface through cultivation of plants and rearing of animals to obtain sustenance or economic gain
<u>Conservation:</u> wise use of natural resources, without wasting them
<u>Crop:</u> any plant cultivated by people
<u>Desertification:</u> human actions causing land quality to deteriorate
<u>Horticulture:</u> growing of fruits, vegetables, and flowers
<u>Natural Resource:</u> materials or substances such as minerals, forests, water, and fertile land that occur in nature and can be used for economic gain.
<u>Preservation:</u> saving natural resources, but no consumptive use of them
<u>Subsistence Agriculture:</u> production of food primarily for consumption by the farmer's family
<u>Sustainable Agriculture:</u> preserves and enhances environmental quality

Bell Ringer

1. Have the following displayed on an easel, whiteboard, or individual sheets of paper for students to review and write down their responses:

What imagery or descriptions come to your mind when you think of careers in agriculture, food, and/or natural resources? Please have 3 -5 responses. Responses may be in picture or written form.

2. Have some students share responses.
3. Point out that there is an enormous variety of careers in this field – identify similarities and differences in responses.
4. Facilitate student discussions about the importance of the Ag, Food, and NR Cluster by discussing responses.

Objectives

Objectives
The student will be able to:
- <u>Identify</u> the central aspects of the Ag, Food, & NR Career Cluster including career paths, skills & interest, and education level
- <u>Explore</u> different careers within the Cluster
- <u>Analyze</u> what is known, wondered, and learned (KWL) about the career cluster to begin conceptualizing an individual career map

Anticipatory Set

1. Divide students into pairs – each student gets a <u>KWL Cluster Chart</u>.
   Verbal instructions:
   - *Think about what was discussed during the bell ringer regarding Ag, Food & NR careers.*
   - *With your partner, list at least 5 items you know about job details, necessary skills, etc. in the "<u>Know</u>" Section.*
2. Have two pairs of students join one-another to form a four-person group
   Verbal instructions:
   - *Compare and discuss each list.*
   - *With your group, list at least 5 things you want to know about the Ag, Food, & NR Cluster in the "<u>Wonder</u>" Section.*
3. Have groups share their new list with the class.

Introductory Questions

Introductory Questions:
Ask the following questions to the whole class with for students to write down their answers and/or discuss with a partner. Have 2-3 students share their answers:

- Why do we need careers in Agriculture?
- Why is it important to have people working in the field of Natural Resources?
- What skills do you have that would help you to be an effective in this cluster?

Learning Task & Exploration Activity

1. Introduce the Agriculture, Food, & Natural Resource Career Cluster Video.

Video Introduction:
The fields of agriculture, foods, and natural resources offer many different career opportunities…In addition, interest in the protection, improvement, cultivation and management of our natural resources provides careers in forestry, logging, and soil & water conservation.

2. View the Ag, Food, & NR Career Cluster video (7:20 min length). Have students complete the Student Viewing Guide as they learn about the Career Cluster.
3. Students will fill out the "Career Cluster Research" section of the viewing guide and explore the Ag, Food, & NR webpage on http://mygpsforsuccess.com/agriculture-food-and-natural-resources/.

Closing

1. Have students complete the "Learned" Section of their KWL with at least 3 pieces of information they learned about the cluster. Students may share out in class as well as discuss with a partner once they have finished.

2. Engage students in a whole class or small group discussion using the Discussion Questions section of this instructional plan – students may use their KWL chart as reference.

Discussion Questions

1. How would you define this Career Cluster?

2. What surprised you about this Career Cluster?

3. What career pathways were represented in this video?

4. How do the skills and/or training necessary to be successful in these fields differ from one another?

5. What new types of technology are being using in these fields compared to twenty years ago?

6. What types of crops and resources are harvested in your region?

7. Why is sustainable agriculture and conservation important to these careers?

8. What are the roles and responsibilities of Agriculture, Food, and Natural Resource employees in their communities?

9. Agriculture is becoming more dependent on advances in agricultural technology, what does this mean for the future of careers in food and agriculture?

Extended Learning

Suggested activities to increase student learning and exposure to this Career Cluster.

- Take students to a local farm and to engage in hands on learn about what it takes to be a farmer/producer in the 21st century.

- Ask the local Cornell Cooperative Extension or other not-for-profit agency to conduct school visits or partner with them for agricultural and Natural Resource programming

- Develop a plan for, manage, and grow a classroom or school garden. Develop a business plan to either sell or utilize the plants. Implement the business plan and create a report for the overall project.

- Tour a local food production facility

- Have students choose a National Park and research how the park is managed and the different varieties of careers of park workers.

- Have each student select a career from this Career Cluster. Students will research the career and present information to the class in the form of an oral presentation, poster, PowerPoint, video or Prezi presentation. Information to research and share might include: salary, education required, typical day schedule, roles and responsibilities, positive aspects of the job and challenges associated with the job.

- Have each student make a list of the Career Readiness Skills that are his/her personal strengths, as well as a list of the skills and behaviors required for a career as an educator. Students compare the lists to determine what Career Readiness Skills need to be strengthened.

- Have students complete a job application and/or job interview with a local employer.

- Help students construct a resume for a specific career in this Career Cluster.

- Arrange for students to meet with the school counselor to discuss classes that would help prepare a student for careers in this Career Cluster and certifications that can be obtained during high school that would be of value.

- Have each student identify a postsecondary institution that is offering certifications or degrees that are required for working in this Career Cluster. He or she should obtain and complete admissions and scholarship applications for the school or program.

Notes to Educator

This packet includes suggested activities questions, and materials to enhance student understanding of this career cluster. Each component may be used individually or modified to fit the needs of your classroom.

More information on this Career Cluster can be found at:

http://mygpsforsuccess.com/agriculture-food-and-natural-resources/

In addition, GPS For Success has an array of resources, including:

- Interest Profiler: *online quiz to assist students in categorizing their interests by possible careers those interests apply to.*
- Scholarship opportunities
- Information on internships
- Sample resumes and cover letters
- Interview preparation materials
- Opportunities for students with disabilities

Agriculture, Food, and Natural Resources Career Cluster
Student Viewing Guide

Name:_____

1. List five careers mentioned during the video:

   1.

   2.

   3.

   4.

   5.

2. **Instructions**: The following question is specific to the <u>Agriculture</u> portion of the *Agriculture, Food, and Natural Resources* Career Cluster video.

   How is technology used in the field of Agriculture?

3. **Instructions**: The following question is specific to the <u>Food Processing</u> portion of the *Agriculture, Food, and Natural Resources* Career Cluster video.

   Name 3 things Food Processing employers look for in students or potential employees.

   1.

   2.

   3.

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Student Viewing Guide

4. **Instructions**: The following question is specific to the <u>Agriculture Equipment</u> portion of the *Agriculture, Food, and Natural Resources* Career Cluster video.

   What's a major difference between how equipment repair is done today versus what it was in the past?

5. **Instructions**: The following question is specific to the <u>Large Animal Veterinary Services, Genetic Engineering and Breeding</u> portion of the *Agriculture, Food, and Natural Resources* Career Cluster video.

   Working in the veterinary field is more than just loving and playing with animals. According to Blake Place from BOCES, what are four things you need to be passionate about to be in the veterinary field?

   1.

   2.

   3.

   4.

6. **Instructions**: The following question is specific to the <u>Forestry, Logging, and Soil and Water Conservation</u> portion of the *Agriculture, Food, and Natural Resources* Career Cluster video.

   Name at least one career with the Soil and Water districts that interests you and why it interests you.

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Student Viewing Guide

Career Cluster Research

Instructions: Visit http://mygpsforsuccess.com/agriculture-food-and-natural-resources/ *to answer the following questions.*

1. Pick one career in this field and describe the pathway for that career (the path taken to become employed as your chosen career).

2. What are the education requirements for each of the career fields defined in the video for this cluster?

   Agriculture

   Food Processing

   Agriculture Equipment

   Large Animal Veterinary Services, Genetic Engineering and Breeding

   Forestry, Logging, and Soil and Water Conservation

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3. Using the career information on the left-hand side of the website, what are the salary ranges for the three different career fields in this cluster?

4. What are three personal skills and three personal interests that you share with this career cluster?

    Skills
    -
    -
    -

    Interests

    -
    -
    -

5. Pick one extended interview. Who is the person being interviewed? What are 2 pieces of information that you found interesting in the interview?

    Person Interviewed: _____

    Interesting Facts:

    1.

    2.

Name: _____   **Date:** _____

Cluster: _____

KWL Chart

Know 🧠

Wonder ☁️

Learned 📊

Name:_____   **Date:**_____

Cluster: _____

KWL Chart

Know   **W**onder   **L**earned

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____