



NEBRASKA CAREER TOURS

WHAT TO EXPECT...



INTERVIEWS

Each video contains interviews with employees and business representatives discussing work requirements, education levels, salary and job prospects.



TOURS

Experience virtual industry tours that provide a unique opportunity to get a glimpse inside Nebraska-based companies without leaving your home or classroom.



INFORMATION

Throughout the videos you will find valuable information regarding job markets, salaries, and educational requirements to help you identify a possible career path.



HEAR FROM PROFESSIONALS. LEARN FROM EXPERIENCE.



NEBRASKA CAREER TOURS

AGRICULTURE, FOOD, AND NATURAL RESOURCES

This diverse career cluster prepares learners for careers in the planning, implementation, production, management, processing and/or marketing of agricultural commodities and services, including fiber, wood products, natural resources, horticulture, and other plant and animal products.



TEACHER DISCUSSION GUIDE
www.necareertours.com





NOTE TO INSTRUCTOR:

Note to instructor: Below are suggested activities and questions to accompany the virtual industry tour. Each component may be used individually or modified to fit the needs of your classroom. For more information on this Career Cluster, visit these websites:

- <http://www.education.ne.gov/nce/CareerClustersResources.html>
- <http://h3.ne.gov/H3/>
- <http://www.nebraskacareerconnections.org>

BELL RINGER:



Display the United States and World Population Clock website for students to view as they enter the room. If Internet service is not available, use an estimated population by looking at the website prior to the lesson.

<http://www.census.gov/popclock>

Post the prompt on the writing surface for students to answer as they enter the room. They will respond individually in their notes. Then have students share with a partner or discuss as a class.

“As the United States’ and the entire world’s population continue to increase, what else must increase to meet the needs of a growing population?”

At the end of the class, revisit the website to see how much population growth has occurred during the class period.

ANTICIPATORY SET:



Guide students to think about the importance of the Agriculture, Food and Natural Resources Career Cluster by posting this scenario on PowerPoint, the writing surface or reading aloud:

“Scenario: You and a group of friends have been selected to be on a new Survivor-like reality show. You will be taken to a desert island in the middle of the Pacific Ocean and expected to survive without contact from the outside world for one year.”

“Make a list of 10 items you would take with you to the island.”

Allow about three minutes for this activity. Then facilitate a discussion by asking these questions:

**“How did you decide what to include on your list?
What are the minimum requirements for human survival?
Food, water, clothing and shelter must be at the top of the list.
These items are supplied to us through careers in the
Agriculture, Food and Natural Resources Career Cluster.”**



INTRODUCTORY QUESTIONS:



Ask the following questions to students in journal form or aloud. If asking aloud, have students share with a partner first, then ask two or three students to share. Responses will vary. Remember these responses are based on the students' knowledge prior to watching the virtual tour.

When you think of Agriculture, Food, and Natural Resources, what types of jobs come to mind?

Are these careers that YOU might be interested in?

CONTENT:



Show the 16-minute virtual industry tour, which features three businesses to the class: www.necareertours.com Students may individually view the video online as well. Have students complete the guided notes worksheet as they learn about the Career Cluster. Introduce the virtual tour by saying:

“Today we will watch a video highlighting three different businesses in the Agriculture, Food and Natural Resources Career Cluster. Each business will describe their involvement in the industry, as well as the different careers associated with this area.”

FOLLOW-UP QUESTIONS:



Ask the following questions to students after they view the virtual industry tour. Questions can be given as journal questions or asked aloud. Questions can also be assigned individually or in groups.

1. How would you define this Career Cluster?

- o The Agriculture, Food and Natural Resources Cluster involves careers that plan, implement, produce, manage, process and market agricultural services and commodities which include food, fiber, wood products, natural resources, horticulture and other plant and animal products.

2. What surprised you about this Career Cluster?

- o Answers will vary.

3. What types of careers are included in this Career Cluster?

- o Agriculture manager, sales, agronomist, financial manager, ag marketing, supply chain, farmer, quality assurance specialist, product development, chef, food scientist, food technologist, agricultural engineer, environmental engineer, environmental scientist, global positioning technician and biologist.
- o Other careers not mentioned in the video: agricultural loan officer, international agri-marketing specialist, animal



- geneticist, animal physiologist, biomaterials engineering, farm and ranch manager, veterinarian, hazardous material handler, health and safety sanitarian, solid waste disposer, toxicologist, biochemist, food broker, food engineer, conservation officer, fisheries scientist, forest scientist, water quality manager, wildlife manager, entomologist, golf course superintendent, landscape architect, plant scientist, diesel mechanic, farm equipment mechanic and welder.
- o A few careers mentioned in the virtual tour are not technically part of the Agriculture, Food and Natural Resources Career Cluster. However, these jobs are an essential part of the industry. They include: Marketing, architect and land use planner.
 - o Note to instructor: This would be a good time to explain to students that this Career Cluster can be divided into seven Career Pathways including:
 - Agribusiness systems
 - Animal systems
 - Environmental service systems
 - Food products and processing systems
 - Natural resources systems
 - Plant systems
 - Power, structural and technical systems
 - o Each Career Pathway has a more narrow skill set for the occupations within this Career Cluster.
 - o For more information about these careers, have students visit: <http://www.education.ne.gov/nce/careerclusters/2013/AGFNRS.pdf> or <http://h3.ne.gov/H3/h3ByCluster.xhtml?param=1.0000>

4. What careers and jobs in this Career Cluster could be obtained immediately after high school graduation?

- o Farmer and seed sales. Most jobs in the virtual tour required some type of degree or certificate.
- o Other examples: Farm and ranch worker, animal caretaker, feed sales, refuse and recyclable material collection, butcher and meat cutter, meat processing slaughter and meat packer, nursery and greenhouse worker, tree trimmer and pruner, electrician apprenticeship, plumbing apprenticeship and welding apprenticeship.
- o For more information about these careers, have students visit: <http://www.education.ne.gov/nce/careerclusters/2013/AGFNRS.pdf>

5. What are the differences between the different pathways of this Career Cluster? Which pathways were represented in the virtual tour?



- Agribusiness: Uses technology to coordinate all activities that contribute to production, processing, marketing, distribution, financing and development of agricultural commodities
- Animal systems: Studies genetics, nutrition, reproduction, growth and development of food and companion animals. Includes the inspecting and grading of livestock food products, purchasing livestock and working in sales or marketing.
- Environmental service systems: Involves pollution control, recycling, waste disposal and public health. Includes hazardous-waste management studies, analysis and research environmental projects.
- Food products and processing systems: Includes finding new food sources, analyzing and developing ways to process, preserve, package and store food. Includes creating new food products and inspect food-processing to ensure sanitation, safety, quality and waste management standards are met.
- Natural resources systems: Includes developing, maintaining and managing the forest and natural environment.
- Plant systems: Includes developing new ways to improve the nutritional value and aesthetic of plants and quality of seeds. Uses genetic engineering to develop pest and drought resistant plants helping producers while conserving natural resources and maintaining the environment.
- Power, structural and technical systems: Applying knowledge of engineering, hydraulics, pneumatics, electronics, power, structures and controls to the field of agriculture. Developing conservation of soil and water to improve the processing of agricultural products.
- DuPont Pioneer represents the Plant Systems Pathway. ConAgra Foods is part of Food Products and Processing Systems. HDR Is focused in the Natural Resources Systems.

6. DuPont Pioneer has an Emerging Leaders Program for new graduates to learn about multiple aspects of the company to prepare employees for management positions. What advantages exist for a company to offer a similar program? What benefits exist for a participant in the program?

- For participants: Learn about many areas in the business while focusing on a major interest, it is a training program to get into a management position which means more responsibility and more pay, meet several different people working in the company and learn about the culture of the company to decide if it is a good fit for them.
- For the company: Train employees for management positions and chance to “try” an employee out to see how they will do in management.



7. DuPont Pioneer is a Fortune 500 company. What does this mean? What advantages does this offer employees?

- o DuPont Pioneer's total revenues ranked in the top 500 of U.S. companies in 2014.
- o Advantages for employees can include a variety of positions, a variety of locations, well-known company listed on resume and large network of co-workers.

8. The professionals of environmental and engineering technicians are considered high skill, high wage and high demand. What does this mean?

- o High skill occupations require some form of training and education beyond high school. Wages are at or above the median average wage of all occupations in Nebraska. The number of annual openings, the net change of employment and the growth rate of the occupation determine the high demand rating.
- o For more information, have students visit: <http://h3.ne.gov/H3/>

9. Eighty-eight different careers use GIS (geographic information systems) map creation software. What are some of those jobs?

- o Most jobs in this career cluster require a bachelor's degree; therefore, the starting salary is higher than some other career fields. Workers in this field are in high demand.
- o Note to instructor: This would be an effective time to start a discussion with students about living expenses. Most students do not have a realistic understanding of the expenses that they will be responsible for paying as an adult. Share with them about salaries, taxes, insurance, house payments, cell phone bills, car payment, electricity, cable TV, etc. Be sure to emphasize the importance of money management and budgeting at any level of income.

10. Core academic skills include reading, written communication, listening, speaking, and mathematic skills with problem solving. How might these core academic skills be used in this career?

- o Answers will vary.
- o Here are a few examples: Farmers, ranchers and veterinarians must be proficient at reading pharmaceutical labels for side effects, dosing instructions and more. Someone developing a new food product must write well and accurately so their research and discoveries are properly recorded and the successes can be re-created. Ag sales and marketing requires listening and speaking skills so good communication with the customer can take place. Knowing and understanding what the customer



wants is key to finding the right product for them and making a successful sale. Environmental scientists use math and problem solving while they conduct the surveys of protected species. They calculate the current population, population increase or decrease and make predictions for future populations of the species. They use those calculations to make recommendations about land use and conservation practices.

11. A Career Ready individual demonstrates both innovation and creativity. When have you demonstrated these Career Readiness skills?

- o Answers will vary.
- o Explain to students this is a sample of a question that would be asked during a behavioral interview. Employers use past experiences as a way to predict future performance. Help students prepare for interviews by practicing responses where they use the STAR response: situation, task, action and result. For more information, have students visit: <http://www.rightattitudes.com/2008/07/15/star-technique-answer-interview-questions/>

12. The virtual industry tour mentioned traits employers seek when hiring. What Career Readiness Skills should a desirable applicant possess?

- o Answers will vary.
- o For more information, have students visit: <http://www.education.ne.gov/nce/Standards.html>

**EXTENDED
LEARNING
ACTIVITIES:**



The following are suggested activities that will increase student learning and exposure to this career cluster.

- Show a Modern Marvels video from History Channel. Applicable topics to this Career Cluster include: Welding, corn, farming technology, cattle ranches, harvesting, coffee, sugar, more snack food tech, cotton, candy, renewable energy, the supermarket, breakfast tech, harvesting 2, cheese, environmental tech II, fast food tech, milk, bread, ice cream, wheat, the horse, the turkey, the pig, the butcher, eggs, the potato, rice and food trucks. Some videos can be found online while others must be purchased. Have students answer a guided note worksheet during the video or write a short reflection paper.
- Obtain certification in Beef Quality Assurance (BQA, www.bqa.org), Dairy BQA (www.bqa.org/dairybqa.aspx), Pork Quality



Assurance (PQAPlus, www.pork.org/pqa-plus-certification/) or other similar animal production certificate programs.

- Start a school-wide recycling program or promote a current recycling program.
- Provide several ingredients for making salsa. In small groups, have students create their own salsa. They must keep accurate records of ingredients in order to make an ingredient label. Have students sample all salsas. For a marketing twist, have students create commercials or advertisements for their salsa.
- Select a career from this Career Cluster. Research the career and present information to the class in the form of an oral presentation, poster, PowerPoint, iMovie or Prezi presentation. Information to find includes: Salary, education required, typical day schedule, positive aspects of the job and negative aspects of the job.
- Make a list of the Career Readiness Skills that are personal strengths. Then make a list of the skills and behaviors required for a career in Agriculture, Food and Natural Resources. Compare the list to determine what Career Readiness Skills need to be strengthened for employment in this Career Cluster.
- Complete a mock job application and job interview with a local Agriculture, Food and Natural Resources employer.
- Construct a resume for a specific career in this Career Cluster.
- Meet with the school counselor to discuss classes that would help prepare a student for careers in this Career Cluster. Also, discuss certifications that can be obtained during high school.
- Identify a post-secondary institution that is offering certifications or degrees that are required in this Career Cluster. Obtain and complete admissions and scholarship applications for the school or program.



AGRICULTURE, FOOD, AND NATURAL RESOURCES

Name: _____

*Instructions: Question 1 should be answered by watching all three sections of the virtual industry tour. **www.necareertours.com***

1. List eight careers mentioned during the virtual industry tour:

- | | |
|----|----|
| 1. | 5. |
| 2. | 6. |
| 3. | 7. |
| 4. | 8. |

2. Where is each business located?

Business	Location

Instructions: The following questions are specific to the DuPont Pioneer Section.

3. Describe what DuPont Pioneer does at this facility:

4. Annually, how much do Nebraska agricultural exports exceed? _____
5. How many locations worldwide does DuPont Pioneer have? _____
6. By 2018, what percent of jobs in the Agriculture, Food, and Natural Resources Career Cluster will require post-secondary education? _____

Instructions: The following questions are specific to the ConAgra Foods section.

7. ConAgra food products are found in what percent of American households? _____

8. Describe what ConAgra Foods does:

9. How many people are employed by ConAgra Foods worldwide? _____

10. Describe the job responsibilities of a chef employed by ConAgra Foods:

11. In Nebraska, on average, how much per hour are food scientists and food technologists paid?

12. A Career Ready individual demonstrates skills including: _____

1.

2.

Instructions: The following questions are specific to the HDR section:

13. How many offices does HDR have worldwide? _____

14. How many employees does HDR have worldwide? _____

15. Describe what HDR does:

16. In Nebraska, environmental and engineering technician occupations are considered H3:

1.

2.

3.

17. Describe the job responsibilities of an environmental scientist:

18. How many colleges in Nebraska offer biology programs? _____



Instructions: Question 1 should be answered by watching all three sections of the virtual industry tour. **www.necareertours.com**

1. List eight careers mentioned during the virtual industry tour:

- | | |
|------------------------------------|-------------------------------|
| 1. Ag sales | 5. Agronomist |
| 2. Farmer | 6. Chef |
| 3. Environmental Technician | 7. Food technologist |
| 4. Foor Scientist | 8. Engineer technician |

(Others: marketing, commercial lead for ag business, research, quality assurance, engineer, land use planner, supply chain, business, finance, architect, consultant, product development, environmental scientist, biologist)

2. Where is each business located?

Business	Location
DuPont Pioneer	York, Nebraska
ConAgra Foods	Omaha, Nebraska
HDR	Omaha, Nebraska

Instructions: The following questions are specific to the DuPont Pioneer Section.

3. Describe what DuPont Pioneer does at this facility:

DuPont Pioneer “feeds the world.” The York facility grows seed and sells to farmers. They also conduct several research trials to help develop the best seed.

4. Annually, how much do Nebraska agricultural exports exceed? 7 billion
5. How many locations worldwide does DuPont Pioneer have? More than 75
6. By 2018, what percent of jobs in the Agriculture, Food, and Natural Resources Career Cluster will require post-secondary education? 44%

Instructions: The following questions are specific to the ConAgra Foods section.

7. ConAgra food products are found in what percent of American households? 99%

8. Describe what ConAgra Foods does:

Invents, makes and distributes food products to retail stores, restaurants, food service companies and private brands.

9. How many people are employed by ConAgra Foods worldwide? 36,000

10. Describe the job responsibilities of a chef employed by ConAgra Foods:

Formulate new products and recipes for a specific company while considering taste, marketing, packaging, and current technology.

11. In Nebraska, on average, how much per hour are food scientists and food technologists paid?

\$33.13/hour

12. A Career Ready individual demonstrates skills including:

1. **Innovation**

2. **Creation**

Instructions: The following questions are specific to the HDR section:

13. How many offices does HDR have worldwide? 200

14. How many employees does HDR have worldwide? 8,500

15. Describe what HDR does:

HDR saves natural resources through engineering, architecture, consulting, environmental science, ocean engineering, land use planning and a variety of other broad services focused on the natural environment.

16. In Nebraska, environmental and engineering technician occupations are considered H3:

1. **High Skill**

2. **High Demand**

3. **High Wage**

17. Describe the job responsibilities of an environmental scientist:

Duties vary day to day including collective surveys of protected species, mapping in the field and issuing permits to ensure the environment is not harmed during building and development projects.

18. How many colleges in Nebraska offer biology programs? 17



NEBRASKA CAREER TOURS

ABOUT THIS PROJECT

The virtual industry tours provide a unique opportunity for students, parents and job-seekers to experience Nebraska-based industries without leaving the home or classroom.

The videos showcase different businesses and industries in each of the sixteen Career Clusters in the Nebraska Model. In addition to the tour of the business or industry, the videos also contain interviews with employees and managers discussing work requirements, education levels, salary and job prospects. The videos provide an accurate picture of today's workplace, breaking down stereotypes and assumptions while emphasizing the knowledge and skills required to be successful.

The teacher and student guides are designed to enhance student learning for each virtual tour. For the students, a guided notes worksheet is included to help them record important information about the career cluster. The teacher's guide includes a lesson plan complete with anticipatory set, introductory questions, and discussion questions to follow the virtual tours.

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