



Lesson 5: Agricultural Careers

Grade Level & Subject: 6-8 / Life Sciences

Lesson Duration: 50 minutes (with 10 and 25 minute extensions)

OBJECTIVES

- Students discover the variety of agricultural careers available and consider their career paths in terms of economics, interests, and suitability to their personal talents and characteristics.
- Students will explore careers related to agriculture, identify personal interests within agriculture or a related field and discuss how agricultural professionals can impact world food
- Students will analyze how human and environmental factors influence sustainability in agriculture and make plans for an advocacy project that will improve agricultural and/or environmental systems in a way that is meaningful for them and/or their school community related to how food is grown, harvested, and used around the world.

Food Education Standards:	Content Area Standards:	This lesson also aligns to:
FES4: Food behaviors are influenced by external and internal factors.	NGSS MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. NGSS MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	WIDA Standard 1 - Language for Social and Instructional Purposes WIDA Standard 4 - Language for Science



LESSON SYNOPSIS

There are numerous agriculture and natural resource careers related to science, engineering, and business. Some careers require a four year degree while others require a certificate or work experience. While more education and higher salaries are often linked, students will evaluate careers that may not have this relationship in order to sufficiently satisfy their interests and needs.

LESSON PREPARATION

Prep Steps	Materials
<ul style="list-style-type: none"> Review the lesson and make adjustments as needed for your class. Pre-assign partners/groups (if desired, random works too). 	<ul style="list-style-type: none"> Computer with internet connection and projector 1:1 student devices (optional) Teacher and Student docs (linked below) Dice Agricultural Career Cards (1 per 4-5 students)

VOCABULARY

- Agriculture [**ag**-ri-kuhl-cher] (noun) - the science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products
- Career [kuh-**reer**] (noun) - an occupation undertaken for a significant period of a person's life and with opportunities for progress; generally a profession requiring special training
- Sustainable agriculture [*suh*-**stey**-nuh-buhl **ag**-ri-kuhl-cher] (noun) - an approach to agriculture that focuses on producing food while improving the economic viability of farms, protecting natural resources, and enhancing quality of life for farmers and society as a whole

LESSON ACTIVITIES

This lesson was adapted from <https://agclassroom.org/matrix/lesson/59/>

Teacher note: These learning tasks and videos are available online for students with access to 1:1 technology, but they should use headphones when watching videos. If your students do not have access to technology, or



you don't want them online, feel free to print off the documents. If students are working online. With all documents, please make a copy, do not request access.

Activity 1 - 20 minutes

Students will play Bushels or Bust to explore variables that determine profits in agriculture. Directions are self-explanatory on the game, but you should review them with the class before they play.

- Decide if you want students to work as individuals or in teams. Divide the teams into groups to play.
- Hand each team a budget sheet to record the changes in yield or the amount of corn produced, price received for their corn crop and cost per acre to grow their corn.
- The decisions the teams need to make are in white. There are some boxes that give the option for additional cost in exchange for an increase yield. The decision is to be made at that time, and it will not be known until the end of the game if the decision was beneficial. Other steps require the teams to roll the dice to determine the risk that their farm family will take. These are accurate risks that farmers face. Risks include planting, pests, weather, markets and harvest outcomes.
- Each team should keep track of their values at each step. Profit will be calculated at the end.
- The team with the highest net profit wins the game.
- Multiply the net profit by 375 acres, the average size farm in Illinois (or whatever the average size in your state). Discuss the outcome with your students.
- When the game concludes, discuss risks that are associated with farming. A
 - . How would your students handle those risks if it was their farming practice?
 - b. How would those risks look every year?
 - c. Would they follow the same path or differ from year to year?
 - d. What are some ways they could help to reduce those risks?

Activity 2 - 20 minutes

Students will explore agricultural careers through the Select R' Us activity to investigate different professions in the agricultural sector. Directions are self-explanatory and students will be self-directed, but you should review the activity and the [Agricultural Career Cards](#) to help support the class before they begin. Have students share in small groups of 4-5.

Activity 3 - 10 minutes

Watch the video: Pilot Light Video: Exploring Careers in Agriculture : ([Spanish version](#))
<https://vimeo.com/757652789> Have students share their chosen professions in the large group if desired. Explain that in order to make our ham sandwich, or receive any of our agricultural products, requires a diverse group of workers and skills. However, the workers can't do it alone. They need ADVOCATES to help fight for change in and around the agricultural community. Hand out the Advocacy Project planning sheet and introduce students to the planning phase. They will be able to choose ANY aspect of agriculture we've discussed so far. Think back and review the previous lessons (Ham Sandwich, Organic vs Conventional, How



It's Made, Agriculture Technology, Ag careers, and have students start thinking about what they might want to advocate for. This is not set in stone, but they should all get down some initial ideas. At this point, this is individual work, but students will be grouped up for the actual advocacy project starting in the next lesson.

CONSIDERATIONS (What adaptations are needed for diverse learners and/or varying dietary needs?)

- Diverse readings, videos, and visuals were provided, but some students may need support in applying their learning. Support as needed.
- Make sure students have access to language support such as Google Translate.

STUDENT SHEETS AND ASSESSMENTS

- Student sheets on the next pages

EXTENSION IDEAS

Short - 10 minutes:

- From the Bushels or Bust game, create a class bar graph that utilizes the profits from each group to represent the difference in profit from one farmer to the next based on the different variables (risks) they encounter throughout the year.

Long - 20-30 minutes

- Watch and discuss one of the following videos with your class about careers in agriculture.
 - The first is from Australia [Farming in NSW](#). Compare and contrast the agricultural needs of that country to those in the USA.
 - The second video is from Into the Outdoors [and focuses mostly around the soybean](#). Discuss how this crop is similar and/or different from those we've discussed in class. It's a WIDELY grown product, one we have not talked about very much so far.

REFLECTION AND NEXT STEPS

Activities that worked	Topics to revisit	Community extension opportunities



Name _____ Class _____ Date _____

STUDENT SHEET: The Four Pillars of AgEd & Advocacy

The Four Pillars of AgEd & Advocacy

<p><i>Each pillar becomes dynamic and fully alive through advocacy. The future of agriculture needs the ideas, actions, and experiences of young people.</i></p>			
Food Education	Growth for All	Environmental Action	Common Ground
<p>Agriculture is a defining facet of our food systems; it promotes informed decision making for healthy futures.</p>	<p>Agriculture is a changing industry ripe for innovation with a wide range of careers that provide economic pathways for individuals and communities.</p>	<p>Agriculture is both a cause and a solution for climate change that requires social, scientific, and community driven action.</p>	<p>Agriculture is an entry point for thinkers of all backgrounds to come together and bridge urban & rural divides.</p>

This lesson mostly approached Environmental Action, and Common Ground.. What challenges or issues exist within agriculture that we are interested in exploring?

Name _____ Class _____ Date _____



STUDENT SHEET: Lesson 5 - Bushels or Bust Game

Operating a farm is a multi-faceted business and, like any business, farmers must purchase supplies and services and sell products. Farmers need a good understanding of agri-business and economics to make a profit. They work with many individuals and companies to supply the needs of their farm and sell their products. Farmers must know how to keep an organized budget, compare prices, and make wise financial decisions. For example, farmers must determine the amount of seed they need to plant their crop and how much it will cost. They must keep track of how much their livestock weighs, how much milk their cows produce, their crop yields per acre, etc.

You will learn that there is much more involved in farming than simply raising a few animals or planting some crops; there are many variables in agriculture that determine profit. This activity is designed to introduce you to some of those risks by allowing you to see factors that can affect yield, or how much a farmer might produce. Farmers can control some inputs to increase profit like seed type, fertilizer usage, labor, and irrigation usage. Things they can't control include pests, weather, markets, governmental policies and premiums or discounts for their crop at market. Supply and demand run the market for each agricultural product and decide the price. Supply and demand have inverse reactions, meaning if one goes up the other goes down. This game allows you to experience the farmer's risks and rewards.

Vocabulary:

- Variables-the factors that cause a change
- Yield-the amount that a crop produces
- Income-the amount of money the farmer receives from the sale of the crop
- Costs-the amount of money the farmer had to pay to produce the crop
- Profit-the amount of money a farmer makes after costs are subtracted from total income

Materials:

- Budget sheet for each team or individual, Dice, Calculators (optional)

How to play:

1. Review your budget sheet, materials, and read through ALL of these directions to make sure you know how to play
2. The decisions you need to make are in white. There are some boxes that give the option for additional cost in exchange for an increased yield. The decision is to be made at that time, and it will not be known until the end of the game if the decision was beneficial. Other steps require you to roll the dice to determine the risk that their farm family will take. These are accurate risks that farmers face. Risks include planting, pests, weather, markets and harvest outcomes.
3. Each person/team should keep track of their values at each step. Profit will be calculated at the end of the game.
4. The team with the highest net profit wins the game.

Everyone begins with the same starting values (90 Yield, \$3.00 Market Price, \$500 Cost). This is the amount of



corn produced (Yield), price received for your corn crop (Market Price per unit) and cost per acre to grow their corn (Cost). To determine your profit, you multiply Yield and Market Price and subtract that total from the cost. For your start: $90 \times 3 = 270$. $500 - 270 = -230$. This means that at the start of the game, ALL players (and farmers!) are starting with a negative profit. You must play the game to try and increase your profit!

ROUND 1 - February: Planting Card

- When it's your turn, roll the dice.
- Follow the directions for your roll 1-6 on the Planting Card and fill in the +/- Yield box.
- Find the totals for February Yield, Market Price, and Cost (Market Price and Cost did not change)
- Decide if you want to make the investment in Biotech Seeds. These can protect you from future attacks by drought or pests, but are expensive and will affect your total profit. Add \$100 to the Cost or pass your turn.

ROUND 2 - March: Pest Card

- When it's your turn, roll the dice.
- Follow the directions for your roll 1-6 on the Pest Card (bugs emerge in spring after all!) and fill in the +/- Cost and/or Yield boxes.
- Find the totals for March Yield, Market Price, and Cost

ROUND 3 - April: Weather Card

- When it's your turn, roll the dice.
- Follow the directions for your roll 1-6 on the Weather Card and fill in the +/- Yield box.
- Find the totals for April Yield, Market Price, and Cost
- Decide if you want to make the investment in fertilizer. Fertilizer helps your crops grow better, but is expensive. If yes, add \$100 to Cost and 25 to Yield. If no, pass your turn.

ROUND 4 - May: Market Card

- When it's your turn, roll the dice.
- Follow the directions for your roll 1-6 on the Market Card and fill in the +/- Market Price box.
- Find the totals for May Yield, Market Price, and Cost

ROUNDS 5-7 - June - August : Weather, Market, and Harvest Cards

- When it's your turn, roll the dice.
- Follow the directions for your rolls 1-6 on the appropriate Card and fill in the +/- box(s).
- Find the totals for each summer month for Yield, Market Price, and Cost

Finish

- Once everyone has completed February - August, calculate the harvest totals for your farm.
- Multiply the final Yield and Price to determine your income.
- Subtract the Cost from your Income to determine your Profit
- Whoever has the highest Profit wins!

Multiply the net profit by 375 acres, the average size farm in Illinois (or the average size of the farm in your state). My net profit was _____.



As a group and/or class....discuss:

Did everyone in your group have a positive profit? Why/why not?

What are the risks that are associated with farming?

- a. How would you handle those risks if it was their farming practice?
- b. How would those risks look every year?
- c. Would you follow the same path or differ from year to year?
- d. What are some ways you could help to reduce those risks?



Name _____ Class _____ Date _____

Welcome to the game of luck and smart thinking- the game of farming. Use the chart to monitor your crop's progress while you roll the dice for your outcome. When you roll the dice, enter the outcome into your chart. At the end, the team or person with the highest profit wins!

	Yield	Market Price	Cost
Starting Values	90	\$3.00	\$500
February: Planting Card	+/-		
	=		
Biotech Seeds? Do you want seeds that can protect against drought and pests? If yes, add \$100 to cost.			+
			=
March: Pest Card	+/-		+/-
	=		=
April: Weather Card	+/-		
	=		
Apply fertilizer? If yes, add \$100 to cost and boost yield by 25.	+/-		+/-
	=		=
May: Market Card		+/-	
		=	
June: Weather Card	+/-		
	=		
July: Market Card		+/-	
		=	
August: Harvest Card			
Harvest totals			

$$\underline{\hspace{2cm}} \quad \times \quad \underline{\hspace{2cm}} \quad = \quad \underline{\hspace{2cm}} \quad - \quad \underline{\hspace{2cm}} \quad = \quad \underline{\hspace{2cm}}$$

Yield Price Income Cost Profit



What did you roll? What does it mean? Find it here.

Planting Card

1. Perfect Planting - Due to rain and temperature, your crop is perfect. Add 25 to yield
2. Land Flooded - Replant your crop: add \$200 to cost for new seed, then roll again for planting
3. Weather is fair - Yield does not change
4. Rain delays - Roll the dice and subtract the number x 10 from yield
5. Perfect Planting - Due to rain and temperature, your crop is perfect. Add 25 to yield
6. Weather is fair - Yield does not change

Pest Card

1. Aflatoxin - Your corn has a case of disease. Subtract 25 for yield and \$0.10 from cost
2. Corn borers - Yield doesn't change if you bought biotech seed. If you did not buy biotech seed, subtract 25 from yield OR buy insect control: Add \$25 to cost and subtract 10 from yield
3. No pests! - You are a lucky farmer! Yield does not change
4. Rootworm - Yield doesn't change if you bought biotech seed. If you did not buy biotech seed, subtract 25 from yield OR buy insect control: Add \$25 to cost and subtract 10 from yield
5. Feral Hogs - The feral hogs found your young, tender corn. They dug up the field and you have to replant what they ate. Add \$250 to the cost to replant what they consumed.
6. Weeds - Subtract 25 from yield OR buy weed control and add \$20 to cost and subtract 10 from yield

Weather Card

1. Sunny days ahead - Yield does not change
2. Drought - If you purchased biotech seed, reduce yield by $\frac{1}{4}$ (25%). If you did not purchase biotech seeds, reduce yield by $\frac{1}{2}$ (50%).
3. Perfect weather - Due to rain and temperature, your crop is doing good. Add 50 to yield.
4. Rain and sunshine - Roll the dice and add the number x 5 to your yield
5. Weather is fair - Yield does not change
6. Too hot and dry - Roll the dice and subtract the number x 10 for yield OR if you bought biotech seed, subtract the number x 5

Market Card

1. Stable market - U.S. corn crop looks good and prices are stable. Price does not change
2. Feedlot downsizes - Downsizing means the price of corn goes down. Subtract \$0.10 from price
3. Drought - U.S. corn supply is significantly reduced. Add \$2.00 to price
4. Bumper crop - Argentina has a huge crop, raising the world supply of corn. Subtract \$0.25 from price
5. Chicken farms move in - Two chicken farms in your area are now raising 500,000 chickens, which eat a lot of corn. Add \$0.75 to price
6. China buys corn - China needs more corn to feed livestock. Add \$0.50 to price



Harvest Card

1. No. 2 Corn - Nice job. You provided a good crop of corn. Price does not change
2. No. 1 Corn - Your corn looks great and you receive a premium. Add \$0.05 to price
3. No. 2 Corn - Nice job. You provided a good crop of corn. Price does not change
4. No. 3 Corn - Your corn has a lot of foreign material and broken kernels. Subtract \$0.05 from price
5. No. 2 Corn - Nice job. You provided a good crop of corn. Price does not change
6. No. 1 Corn - Your corn looks great and you receive a premium. Add \$0.05 to price



Name _____ Class _____ Date _____

STUDENT SHEET: Lesson 5 - Agricultural Careers

According to the United States Department of Agriculture National Agricultural Statistics Service (USDA-NASS), Illinois farmland covers 27 million acres -- about 75 percent of the state's total land area and has 72,000 farms. The large number of farms, coupled with the diversity of commodities produced, makes it difficult to describe a typical operation. However, statistics provide some indication about what it means to farm in Illinois.

The average size of an Illinois farm, including hobby farms, is 375 acres. Most farm acreage is devoted to grain, mainly corn and soybeans. About 3 percent of Illinois farms have swine (pigs). Beef cows are found on about 22 percent of farms, while about 1 percent have dairy cows. Some farms produce specialty crops and livestock, including alfalfa, canola, nursery products, emus and fish. Many farming operations also support recreational activities such as hunting and fishing.

As you learned in the previous lesson, agriculture in the state of Illinois is big business. Marketing of Illinois' agricultural commodities generates more than \$51.1 billion annually. Crops account for 40 percent of that total. Illinois ranks fifth nationally in the export of agricultural products with \$10.6 billion worth of goods shipped to other countries.

Billions more dollars flow into the state's economy from ag-related industries, such as farm machinery manufacturing, agricultural real estate, production and sale of value-added food products, and more. Rural Illinois benefits principally from agricultural production, while agricultural processing and manufacturing strengthen urban economies.

Knowing all that...CONGRATULATIONS! You have been hired by Farms R' Us to work in the agricultural sector! Your first assignment is to figure out exactly what it is you'd like to do and why. You will research the description, responsibilities, requirements, personality type, and suggested high school courses so that you can select one profession (job) you might like to do. You will use some pre-made information cards and the internet to choose your profession..

If possible, PLEASE try and keep your decisions to yourself! We don't want to influence each other about our decisions, we want everyone to look at the profession that interests THEM. When finished, we are going to share and compare as a class.

As you go through this learning activity, keep the following questions in the back of your mind. Remember, these are REAL jobs done by REAL people and professions you could ACTUALLY do!

- What is the demand for this career? Is this something that is highly needed right now? Why/why not?
- Is it declining or is it increasing? Is this job projected (predicted) to grow or shrink in the next decade?
- Will these jobs be in your area? Would you have to move to do this job or is it locally available?
- What are the pros and cons of this career? Advantages or disadvantages? Likes or dislikes?
- Requirements for specialized training? Is this a job that requires a lot of time/education/training to do?
- How does this compare or relate to other professions in the agricultural sector?



Name _____ Class _____ Date _____

STUDENT SHEET: Lesson 5 - Agricultural Career Cluster Investigation

1. What is the name of your chosen occupation?

2. What duties or responsibilities go along with this job?

3. What skills are needed for this job?

4. What type of personality is needed for this job?

5. What physical requirements or limitations are associated with this job?

6. What educational background is required?

7. What courses, especially in science, should be taken in high school and in college?

8. What is the best type of school to attend to attain the necessary skills?

10. What are some positive aspects of this job?

11. What are some negative aspects of this job?

12. How does this profession help to better society?

13. What is today's demand for people in this job?

14. What is the future outlook for this job?



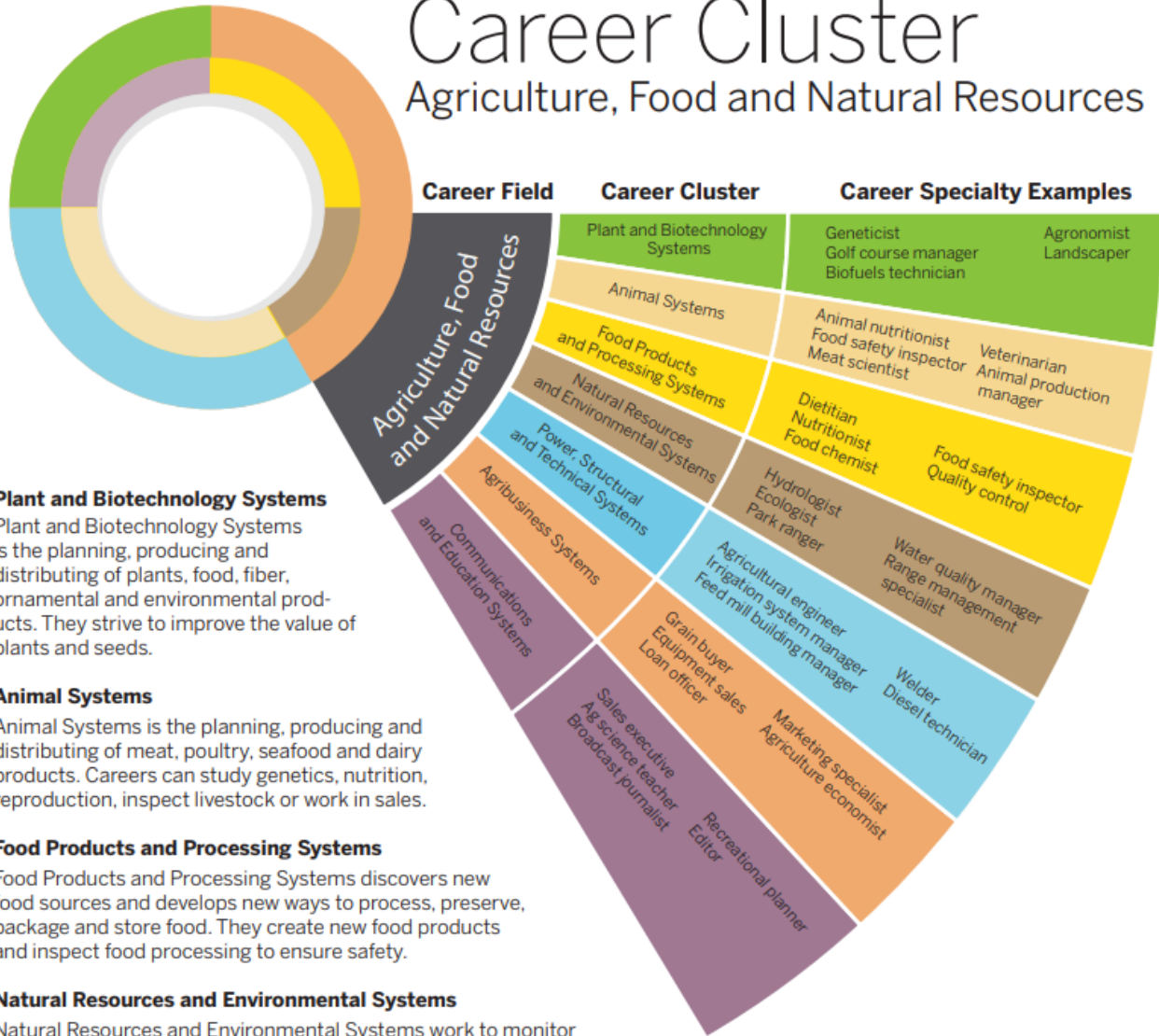
Name _____ Class _____ Date _____

STUDENT SHEET: Lesson 5 - Research Note Catcher



Career Cluster

Agriculture, Food and Natural Resources



Plant and Biotechnology Systems
Plant and Biotechnology Systems is the planning, producing and distributing of plants, food, fiber, ornamental and environmental products. They strive to improve the value of plants and seeds.

Animal Systems
Animal Systems is the planning, producing and distributing of meat, poultry, seafood and dairy products. Careers can study genetics, nutrition, reproduction, inspect livestock or work in sales.

Food Products and Processing Systems
Food Products and Processing Systems discovers new food sources and develops new ways to process, preserve, package and store food. They create new food products and inspect food processing to ensure safety.

Natural Resources and Environmental Systems
Natural Resources and Environmental Systems work to monitor and maintain the land, air and water. They work to keep the environment clean and accessible to the public.

Power, Structural and Technical Systems
Power, Structural and Technical Systems helps to design and maintain machinery used in agriculture by applying knowledge of engineering, hydraulics, electronics, power and structures. They develop ways to help conserve soil and water and improve agricultural products.

Agribusiness Systems
Agribusiness Systems uses technology to coordinate all activities that contribute to production, processing, marketing, distributing, financing and development of all agriculture commodities. They help to increase efficiency and profitability by using spreadsheets, satellite systems and other innovations.

Communications and Education Systems
Communications and Education Systems creates the knowledge to communicate through speaking, web technology, writing and teaching, all focused on agriculture. They can become ag teachers, extension agents, camp directors, newspaper writers, sales representatives or work for commodity groups.

<https://texasfarmbureau.org/ag-classroom-lesson-plans/>



Name _____ Class _____ Date _____

STUDENT SHEET: Lesson 5 - Emerging Agricultural Technologies

Animal Technology

- Genetic Engineering in Animal Agriculture and Aquaculture
- Reproduction and Embryo Transfer
- Transgenic Poultry
- Transgenic Fish
- Transgenic Swine
- Transgenic Ruminants
- Animal Health
- Steroid-like Growth Promotants

Plant Technology

- Genetic Engineering in Crop Agriculture
- Genetic Technology for Resistance to Insect Pests
- Genetic Modification for Weed Control
- Genetic Modification for Disease Resistance
- Biocontrol for Weeds
- Pathogens for Insect Control
- Use of Parasites and Predators to Control Insect and Mite Pests in Agriculture
- Microbial Biocontrol of Plant Diseases
- Temperature and Water Stress
- Evolution of Resistance by Weeds and Pests to Herbicides and Pesticides
- Genetic Exchange between Genetically Engineered Crops and Close Relatives

Emerging Computer and Systems Technology

- Knowledge-based Systems for Agriculture
- Use of Expert Systems in Animal Agriculture
- Sensor Technology
- Robotics and Intelligent Machines
- Nanotechnology

Food Safety and Quality

- Biotechnology in Food Processing
- Assessing the Safety of Genetically Engineered Foods and Feeds

Bioenergy

- Algae Fuels
- Biomass Fuels



Name _____ Class _____ Date _____

STUDENT SHEET: Lesson 5 - Career Activity Scenario - KEY

1. A family goes to the grocery store to pick up some groceries. The food exists because of farmers and ranchers who manage natural resources like soil and water carefully in order to grow the raw ingredients to fill the grocery stores. At the beginning of the season, a farmer (also known as a grower or producer) needs to test the soil to check for nutrients and to determine which fertilizers are necessary. The farmer needs the services of a__ (Soil Scientist).
2. The fertilizer plant that produces the fertilizer to sell to the farmer wants to reduce its environmental impact. Who could the plant hire to help monitor waste discharge and assess environmental quality of the surroundings?__ (Environmental Scientist)
3. The farmer is concerned that when it rains fertilizer from the fields may be getting washed into a nearby river. The farmer goes to the Natural Resources Conservation Service to enlist the help of a _____ (Hydrologist).
4. A new seed hybrid that is better suited for the farmer's climate or soil has been developed. Who developed that seed?_ (Plant Geneticist)
5. A couple of months after planting, the plants are growing, but the farmer notices holes in the leaves. They may be the result of an insect. Who can help identify the problem?__ (Entomologist)
6. The insects have been identified and sprayed, but now there are weeds threatening to take over the field. If the weeds are not controlled soon, they will begin to outcompete the crop plants for sunlight, water, and soil nutrients. Who can help the farmer control this problem?__ (Weed Scientist)
7. A Plant Physiologist says that the plants are stressed by either too little water or high soil salinity. Who can help the producer determine where irrigation is not reaching the plants across the hundreds of acres of fields?_____ (Remote Sensing Specialist)
8. The crop is ready to harvest, and the farmer delivers it to the processing plant. The processor will turn the wheat, corn, cherries, etc. into bread, cookies, chips, pies, and so many other products. Who develops these food products?.(Food Scientist)
9. Who works with the food processor to ensure that the food produced is wholesome, safe, and sound?_____ (Food Safety Specialist)
10. Who determines the nutritional values of the food products?_____ (Nutritionist/Dietitian)
11. What if the corn is bound for animal consumption rather than human consumption? Who helps determine feed rations?_____ (Animal Nutritionist)
12. If an animal gets sick from eating too much corn, who will a rancher call?_____ (Veterinarian)



Name _____ Class _____ Date _____

STUDENT SHEET: Lesson 5 - Career Activity Scenario - Student Sheet

1. A family goes to the grocery store to pick up some groceries. The food exists because of farmers and ranchers who manage natural resources like soil and water carefully in order to grow the raw ingredients to fill the grocery stores. At the beginning of the season, a farmer (also known as a grower or producer) needs to test the soil to check for nutrients and to determine which fertilizers are necessary. The farmer needs the services of a _____.
2. The fertilizer plant that produces the fertilizer to sell to the farmer wants to reduce its environmental impact. Who could the plant hire to help monitor waste discharge and assess environmental quality of the surroundings? _____
3. The farmer is concerned that when it rains fertilizer from the fields may be getting washed into a nearby river. The farmer goes to the Natural Resources Conservation Service to enlist the help of a _____.
4. A new seed hybrid that is better suited for the farmer's climate or soil has been developed. Who developed that seed? _____
5. A couple of months after planting, the plants are growing, but the farmer notices holes in the leaves. They may be the result of an insect. Who can help identify the problem?

6. The insects have been identified and sprayed, but now there are weeds threatening to take over the field. If the weeds are not controlled soon, they will begin to outcompete the crop plants for sunlight, water, and soil nutrients. Who can help the farmer control this problem?

7. A Plant Physiologist says that the plants are stressed by either too little water or high soil salinity. Who can help the producer determine where irrigation is not reaching the plants across the hundreds of acres of fields? _____
8. The crop is ready to harvest, and the farmer delivers it to the processing plant. The processor will turn the wheat, corn, cherries, etc. into bread, cookies, chips, pies, and so many other products. Who develops these food products? _____
9. Who works with the food processor to ensure that the food produced is wholesome, safe, and sound? _____
10. Who determines the nutritional values of the food products? _____
11. What if the corn is bound for animal consumption rather than human consumption? Who helps determine feed rations? _____
12. If an animal gets sick from eating too much corn, who will a rancher call? _____



Name _____ Class _____ Date _____

PILOT LIGHT

Planning an Advocacy Project - As you start as an individual...get ALL your thoughts out!

Brainstorm

What are ALL of your ideas? What do you want to advocate for? Where do you see room for growth? Where do you see problems that still need to be solved or can be improved?

What tasks and work will you have to do?

Prioritize

What are the most important tasks and work? Why?

What is time sensitive? How do you know?