**The relationship between agriculture and the economy**

**Pillar 6 A. Explore jobs of interest in agriculture**

 (9th – 12th Grade)

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| **Website**: <http://msue.anr.msu.edu/news/interest_in_agriculture_careers_are_on_the_rise> <http://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=149&grade=9&author_state=0> **Video:** <http://www.foodspanlearning.org/films/food-frontiers.html> <https://www.youtube.com/watch?v=mobagrTl1vY>  |

**Find Your Future Career**

**Purpose**

Students will discover the variety of agricultural careers available and consider their future career paths in terms of economics, interests, and suitability to their personal talents and characteristics.

**Materials**

**Activity 1:**

* [Living Science Career Cards](http://www.agriculture.purdue.edu/usda/careers/contactus.html)
* *Emerging Agricultural Technologies*
* *Career Activity Scenario*

**Activity 2:**

* 7 large resealable bags that contain equipment as listed on *Living Science Careers Equipment Kits List*\*
* 4, 15-foot pieces of yarn; each a different color; ends tied together\*
* 4 signs printed on card stock (approximately 8 1/2" x 5 1/2"); labeled PLANT, SOIL, WATER, ANIMAL\*

**Concept Elaboration and Evaluation:**

* *Career Matching* activity sheet, 1 per student
* *Agricultural Career Cluster Investigation* activity sheet, 1 per student (optional)

 \*These items are included in the [Living Science Careers Equipment Bags](https://utah.agclassroom.org/cart/Details.cfm?ProdID=579&category=0) available from Utah Agriculture in the Classroom.

Essential Files (maps, charts, pictures, or documents)

* [Exploring Living Science Careers Files](http://naitc-api.usu.edu/media/uploads/2015/11/02/FindYourFutureCareerFiles_1.pdf)

**Vocabulary**

**Career:** an occupation undertaken for a significant period of a person's life and with opportunities for progress

**Background Agricultural Connections**

Explore agricultural and natural resources **careers** that go beyond the stereotypical farmer and rancher occupations. These careers focus on food, land, and people and significantly affect our quality of life and our environment. To assess student knowledge about agriculture and its impact on their lives, do the [“Source Search”](http://agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=6&search_term_lp=source) activity prior to this lesson. After the students complete this activity, it becomes obvious to them that there must be numerous careers in agriculture and natural resources because they learn that all the things we use every day (with the exception of services) are either grown or extracted from the natural world.

**Interest Approach – Engagement**

1. Ask your students the following questions:
	* "What do you see yourself doing in the future?"
	* "What are possible careers?"
	* "How much do you want to earn?"
	* "How much training or school do you think you will need to achieve your career goals?"
2. Ask students to list some possible careers within the agriculture industry. Make a list on the board. If needed, refer to the [*What is Agriculture?*](http://www.agclassroom.org/teacher/matrix/resources.cfm?rid=304&search_term_cr_cr_cr_cr_cr=agriculture) poster to help them visualize what agriculture is. Most likely, students will list very traditional careers in agriculture such as a crop farmer or cattle rancher. Point out to students that there are many, many careers in the agriculture industry and they will be learning about some of them.

**Procedures**

**Preparation:**

Obtain the Living Science Career Cards (see Materials). Laminate the cards, punch a hole in the upper left corner, and organize them into 14 groups as suggested below. Not all the cards will be used in this activity. Use small book rings to keep the following groups together:

Group 1: Soil Scientist, Forester

Group 2: Hydrologist, Renewable Energy Specialist

Group 3: Virologist, Plant Geneticist, Fisheries Scientist

Group 4: Biotechnologist, Environmental Scientist

Group 5: Toxicologist, Forest Engineer, Food Safety Specialist

Group 6: Entomologist, Wildlife Biologist

Group 7: Food Process Engineer, Nematologist

Group 8: Weed Scientist, Plant Pathologist

Group 9: Plant Physiologist, Aquaculturist

Group 10: Remote Sensing Specialist, Horticulturist, Range Manager

Group 11: Food Scientist, Turf Scientist

Group 12: Nutritionist/Dietitian, Florist, Conservation Biologist

Group 13: Animal Nutritionist, Wood Scientist

Group 14: Veterinarian, Agronomist

**Activity 1: Agricultural Career Scenario**

1. Use a concept web to define *agriculture* and *natural resources* with your students.
2. Ask students to create a list of agricultural and/or natural resource careers on the board or add them to the previously created concept webs.
3. Next, add the careers cited on the career cards. These careers are integral to productive agriculture and well-maintained natural resources, yet most students will not be familiar with the job titles.
4. Divide the class into 14 groups; give each a set of the ringed career cards. Ask the students to take five minutes to read the cards they have received and familiarize themselves with the careers, what roles they play in the agricultural community, and what education is necessary for each profession. The education required for each career is included on the cards, and the explanations emphasize that students should study science, math, and English in high school in order to prepare themselves for similar subjects at the university level. Remind students that there will be entry- and mid-level occupations that support the highly skilled occupations.
5. Read the “Career Activity Scenario” sheet and ask students to raise their hands if they think they know the career that correctly fills the blank. After each profession is answered correctly ask, “What other cards are in your group? What courses do they need to complete to get their degrees?”
6. Share with students the “Emerging Agricultural Technologies” handout.

**Activity 2: Where do I stand? What tools do I use?**

1. Ask students to remove the Living Science Career Cards from their rings and distribute them so that each student has one. If there are not enough cards, you may choose to print additional cards from <https://www.agriculture.purdue.edu/USDA/careers/index.html>, or students may share.
2. Place the seven equipment bags around the classroom. Arrange the four pieces of yarn on the floor as intersecting circles (similar to a Venn diagram). Place one sign (PLANT, SOIL, WATER, and ANIMAL) in the center of each of the circles.
3. Ask the students to think about the tools and equipment they would need to perform the jobs as described on their assigned career cards.
4. Instruct students to find the bags that contain the equipment most likely to be used in their careers. *Note: several students will share each bag.*
5. Once students have correctly identified their equipment bags, ask students to stand on the circle that indicates the resource(s) with which they would most likely work. For example, a student holding the Veterinarian Card would stand in the ANIMAL circle. However, a student holding the Aquaculturist Card may stand in the intersection of the PLANT, ANIMAL, and WATER circles.
6. Ask each student to explain his or her career’s role in interacting with the circles identified above. Also ask students to explain how these careers might interact with each other.

**Concept Elaboration and Evaluation**

1. Use the *Career Matching* activity sheet to check student understanding. *Note: You may wish to divide these careers among students.*
2. KEY:

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 | 1. 16
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| 1. 13
 | 1. 9
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| 1. 19
 | 1. 32
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| 1. 10
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 | 1. 31
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| 1. 27
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 | 1. 2
 | 1. 24
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| 1. 12
 | 1. 14
 | 1. 22
 | 1. 26
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1. Using the [National FFA Ag Explorer](https://www.agexplorer.com/), ask students to select a career cluster and then complete the *Agricultural Career Cluster Investigation* activity sheet.
2. After conducting these activities, review and summarize the following key concepts:
	* There are many careers in agriculture that take place both on and off the farm.
	* Agricultural careers can be related to plants, soil, animals, water, or any mixture of these 4 categories.
	* Careers in all areas of agriculture require varying levels of education and skill.

**Enriching Activities**

* Create your own “Career Activity Scenario” using the remaining Living Science Career Cards
* Using the FFA Career Explorer, ask students to select a career cluster and then complete the "Agricultural Career Cluster Investigation" activity sheet. https://www.ffa.org/resources/career-explorer
* Ask the students to brainstorm other agricultural careers that have been left out of the activity. Popular ones include mid-level jobs in processing, marketing, and distribution. Ask each student to create their own agricultural or natural resource career card.

**Suggested Companion Resources**

* [Living Science Careers Equipment Bags](http://www.agclassroom.org/teacher/matrix/resources.cfm?rid=795) (Kit)