**The relationship between agriculture and the economy**

Pillar 6 A. Identify jobs of interest in agriculture (Grades 4th – 8th)

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| **Websites**:  (A) <https://climatekids.nasa.gov/career-auditor/>  (B)<http://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=594&search_term_lp=j205068>  (C) <http://www.ilprogramsofstudy.org/docs/Agmodel.pdf>  **Hands On**: <http://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=489&grade=6&author_state=0&search_term_lp=careers> |

Activity: AgVenture: Sourcing Ag Careers

Digital Activity: App about Careers in Agriculture: <http://www.farms.com/agriculture-apps/business/ag-careers-4-u>

AgVenture: Sourcing Ag Careers

Purpose

Students consider the scope of careers related to the science, art, or practice of agriculture and examine career opportunities that are part of the five agricultural pathways.

Materials

**Activity 1**

* *Pictures of Common Products,* printed, cut apart, and laminated
* Four containers (e.g., tubs, boxes, or bags) labeled “Store,” “Factory,” “Farm,” and “Natural Resources”

**Activity 2**

* *Get Your Money Where Your Mouth Is* handout, 1 per group
* *Ag Career Graphic Organizer* activity sheet, 1 per group

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

* [Ag Career Graphic Organizer (Bread Example)](http://naitc-api.usu.edu/media/uploads/2016/07/27/graphic_organizer_example.pdf" \t "_blank)
* [Pictures of Common Products](http://naitc-api.usu.edu/media/uploads/2016/07/27/source_search_pictures.pdf" \t "_blank)
* [Ag Career Graphic Organizer (Blank)](http://naitc-api.usu.edu/media/uploads/2016/07/27/graphic_organizer_blank.pdf" \t "_blank)
* [AgVenture PowerPoint](http://naitc-api.usu.edu/media/uploads/2016/07/27/AgVenturePowerPoint.pptx" \t "_blank)
* [Get Your Money Where Your Mouth Is Handout](http://naitc-api.usu.edu/media/uploads/2016/07/27/getyourmoneywhereyourmouthis_reading.pdf" \t "_blank)

Vocabulary

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

Did you know? (Ag Facts)

* Between 2015 and 2020, there are expected to be 57,900 average annual openings for graduates with bachelor’s or higher degrees in the areas of food, agriculture, renewable natural resources, and the environment.1
* Almost half of the opportunities will be in management and business.1
* Another 27% will be in science, technology, engineering, and mathematics (STEM).1
* Jobs in sustainable food and biomaterials production will make up 15%, while 12% of the openings will be in education, communication, and governmental services.1

Background Agricultural Connections

Many people have the misconception that farms simply provide us with raw produce and other foods. In reality, agriculture also provides us with a wide variety of raw materials from which we are able to make clothes, books, cosmetics, medicines, sports equipment, and much more. Students may not realize that the items they use every day come from resources that are found in the environment. These resources are either extracted from the natural world through industries such as mining, or they are used in agricultural production. Most students don’t recognize the origins of the products, and they think of the sources of these products as factories or stores. It is important for students to understand that before an item ever enters a factory or store, it began as a resource or product of the natural world.

Interest Approach – Engagement

Begin a discussion with your students to evaluate their prior knowledge of agriculture and its role in their life. Ask students questions such as:

* “What is the impact of agriculture on your everyday life?”
* “What would happen if there were no farmers or ranchers?”
* “What careers do you think support the ability of farmers and ranchers to produce food, clothing, and shelter?”

Procedures

**Preparation**

1. Cut out the *Pictures of Common Products* (there are 40). Randomly divide the pictures into two groups. Use two colors of poster board (or card stock) and glue the pictures onto the poster board. Cut out the poster board around the pictures leaving a ¼ - ½ inch border. Laminate the pictures for future use.
2. Obtain four containers (boxes, plastic tubs or paper grocery bags) and label each with one of the following: “Store,” “Factory,” “Farms” and “Natural Resources.”
3. Identify a location for a relay race outside, in a wide hallway, or in a gymnasium.
4. Students will be doing a concept web for Activity 2, if you need to familiarize yourself with concept webs, visit this [Concept Maps & Brainstorming](http://e-integrate.wikispaces.com/Concept+Maps+%26+Brainstorming" \t "_blank) site.

**Activity 1**

1. Inform students that they will be participating in an activity to learn about the sources of many day-to-day items.
2. Divide the class into two teams. Divide the laminated pictures by color. If you have used red and blue poster board, you have a red and blue team. Be sure you have the same number of pictures in each pile. This lesson comes with 40 pictures to accommodate large classes, but you may not need them all. If you have 26 students you will only use 26 pictures, 13 in each pile. Each student will take only one turn in the relay. If you have 25 students, you will still need 13 pictures in each pile, and someone will take two turns. This will keep the relay fair.
3. Tell the students where they are going for the relay race and that they will need to line up behind one another. Their task will be to sort the pile of pictures placed in front of each team into one of the four tubs. Be sure to have all the pictures face down. Locate the tubs 20-50 feet away from the first person in each line. Give students the following instructions: This is the source relay; your job is to place each picture in the tub that is the source for the items we use every day. When you are in the front of the line, pick up a card, look at the picture, then run to and place the picture in the correct tub based on the product’s “source”– either “Store,” “Factory,” “Natural Resources,” or “Farm.” You are looking at the product, not the packaging. The next person in line goes when the person in front of them returns, crossing over the start line or hand-tagging the person now in front of the line. The returning player should go to the end of the line.
4. Continue the relay race until all of the pictures have been sorted. The first team done with the sort wins! Or do they? Now it is time to see if the pictures were sorted correctly.
5. Ask the students to gather around you as you go through the pictures in each box. As you hold up each picture, the students can show whether they agree or disagree with the sort. Begin with the “Farm” container. If the item contains ingredients or raw products from a farm, the item is in the correct box. Examples would be any food items such as cereal, cookies, and milk, or any clothing item made out of a natural fiber such as cotton (jeans) or wool (coat). Some items from a farm that are not eaten or worn would be paint (this contains linseed or soybean oil), or fuel such as ethanol. The “Farm” container will typically have only a few items in it. Next, look at the “Natural Resources” tub; it will only have a few items in it as well. Items in this tub should be products we get from the ocean, from plants or animals that occur naturally without management from humans, or from mining. Examples of items that should be in this box are: fish or shrimp (wild; however, fish and shrimp are also farmed), cars, salt, water, plastic (starts as oil, which is mined) synthetic fabrics (polyester, petroleum or oil products), computers, cell phones, any metallic items. Wood products may be in this box, but many wood products are from timber grown on farms. Let the class decide how to divide these. You might decide to “split the difference;” put one (the fish) into the “Farm” box and the wood into the “Natural Resources.” Remind your students that this is the source search. What is the real source of the things we use every day? Nearly all are grown or mined – farmed or extracted from the natural world. With this concept in mind, you are ready to take a look at the “Factory” box. A factory is a place where raw ingredients are changed into the useful items we need or want; wood into furniture, ore into steel for cars, wheat into bread, and potatoes into chips. A factory assembles items for sale in a distribution center, a store. Everything in the “Factory” box should be sorted into either the “Farm” or “Natural Resources” container. After doing this, your students get it – products have been grown or mined. They realize that like the “Factory” container, nothing should be in the “Store” container; this is just where we purchase the items. Factories and stores rely on raw ingredients from the farm and natural world. Every picture or product is now in either the “Farm” or “Natural Resources” container. At this point you’ll want to remind students that farms need natural resources – soil, water, light, and air. The “Farm” container could actually be placed into the “Natural Resources” container!
6. As a wrap up, use these questions to review and summarize these key concepts about agriculture and possible agricultural careers:
   * Which of the products in the tubs do we need to survive? Which do we want for a variety of reasons?
   * Considering all the things we use every day, how many careers do you think there might be in the area of farming or agriculture and natural resources? From production, processing (factory), to distribution what entry level and highly skilled jobs are there?

**Activity 2**

1. Divide the class into groups of three or four and provide each group with a copy of the article *Get Your Money Where Your Mouth Is*.
2. Ask each group to select one of the images from the “farm” tub from the activity on Day 1.
3. Ask someone from each group to read a paragraph of the article aloud until the entire article has been read. Use questioning techniques to ensure the content of each paragraph is being understood by your students. This article is designed to entice international students to consider agricultural careers and focuses on science-related careers. Explain to the students that these careers (they are underlined) each have a focus (these are explained in the article) and are part of the five agricultural pathways.
4. Show students the bread example of the *Ag Career Graphic Organizer* (image attached, may be copied and pasted into a PowerPoint slide), and explain how each of the noted careers is associated with bread.
5. Provide each group with a product *Ag Career Graphic Organizer* activity sheet (attached, this may also be done on a section of whiteboard, or self-adhesive poster paper for sharing), and ask them to use the product they have selected and the article to fill in the organizer. Tell the students that they will need to be able to explain why the career they add is part of the organizer (assessment).
6. Ask each group to share with others (entire class or another group) the product they selected and discuss at least three of the careers they added and why.

**Concept Elaboration and Evaluation**

After conducting these activities, review and summarize the following key concepts:

* Natural resources and farms (which also rely on natural resources) are the source for everything that we use and eat.
* Careers in production agriculture include farmers and ranchers. Typically these careers are directly involved with the growing of crops or the raising of animals.
* In addition to production agriculture there are many careers in fields related to agriculture such as business, science, nutrition, and more.

Suggested Companion Resources

* [Living Science Careers Equipment Bags](http://www.agclassroom.org/teacher/matrix/resources.cfm?rid=795) (Kit)
* [Living Science Career Cards (posters or mini-posters)](http://www.agclassroom.org/teacher/matrix/resources.cfm?rid=93) (Poster, Map, Infographic)
* [Connecting to Agriculture](http://www.agclassroom.org/teacher/matrix/resources.cfm?rid=788) (Multimedia)
* [How It's Made Documentary Series](http://www.agclassroom.org/teacher/matrix/resources.cfm?rid=389) (Multimedia)
* [National FFA Ag Explorer](http://www.agclassroom.org/teacher/matrix/resources.cfm?rid=94) (Website)

Sources/Credits

Goecker, A.D., Smith, E., Fernandez, J. M., Ali, R., & Theller, R. G. (2015). Employment opportunities for college graduates in food, agriculture, renewable natural resources, and the environment, United States, 2015-2020. Retrieved from [https://www.purdue.edu/usda/employment/](https://www.purdue.edu/usda/employment/" \t "_blank)