

BUS: Agricultural Career Concept Mapping (Ag)

Summary

Students examine workplace tasks and concepts in agriculture and expand their understanding of agriculture.

Time Frame

1 class periods of 45 minutes each

Group Size

Large Groups

Life Skills

Employability

Materials

Bulletin Board Paper (5 pieces 2' x 3'), or Dry Erase (Chalk) Board, if you have enough board room for 5 groups of students

Colored Pencils or Dry Markers or Chalk (5 sets with 5 different colors in each set)

- [Discover Agriculture poster](#)
(FREE from Utah AITC)
- [Discover Agriculture DVD](#)
(available from Utah AITC) or [YouTube Channel](#)

Background for Teachers

How do you define the word agriculture? Merriam-Webster's Dictionary states that it is 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. An accurate definition, but students may find it difficult to link the importance of agriculture to his or her life.

Graphic organizers are research-based techniques that help students understand new concepts. They are particularly beneficial for visual learners. They are effective because learners are able to relate new concepts to their preexisting understandings and recognize new relationships among concepts. These associations help students to retain what they have learned; in addition, a concept map may help to identify student misconceptions.

Agriculture is a big "umbrella" term that includes so many concepts from farm-to-fork and field-to-fabric -- not to mention all the other industrial uses of agricultural products such as linseed oil for paint and corn for fuel. A concept map is a good way to visually define and relate agriculture and its effects on our lives.

Intended Learning Outcomes

Examine and describe how agriculture and natural resources impact our quality of life.

Recognize and explain how the agricultural system works (production to consumption) and identify related corresponding careers in agricultural and forestry production, education, communication and government services, management and business, and scientific and

engineering opportunities, including career educational requirements and salary ranges. Students will explore and identify emerging technologies and careers in agriculture (e.g. biotechnology, cloning, GIS/GPS applications such as precision agriculture and livestock identification, bioenergy—fuels, and other manufacturing processes—environmental monitoring, nutrition, new technologies for food safety and security).

Instructional Procedures

Activity Procedures

Using the bulletin board paper you have cut approximately 2' x 3', write one of the following words on each piece: "FARM," "FOOD," "FABRIC," "FORESTRY," and "FLOWERS." Or, draw five 2' x 3' rectangles on the dry erase boards, amply spaced around the room for the groups to gather around. Use the attached transparencies as examples.

Divide your students into five groups. Give each group one of the sheets of paper with their word (coincidentally they all start with F, easy to remember later), or send them to their word "space" on the dry erase board. If they are using paper, give each group a set of colored pencils. If they are using the dry erase board give each group a set of colored dry erase markers. If you have a different color pencil/marker for each student in each group, you'll be able to determine if every student participated in the activity.

Ask the students to examine the word and consider the following: What do they know about that word? Do they have a direct or indirect relationship to that word?

Ask students to create a concept map around their group's word by thinking about products they can associate with the word. Give them about 5 minutes.

Next, ask them to identify careers with the new word links they have created. For example, if they have listed the word "yogurt" on "FOOD," they should now link the word to milk processing plant worker, and then to dairy farmers, and then to dairy computer programmers, and milk hauling truckers, etc. Again give the students 5 minutes to see if they can get 20 new career links. Or, make it a contest to see which group can link and list the greatest number of careers. Yes, they can add new words that help to make the new career link.

When the students have completed their maps, ask each group to share their map, explaining their connections (paper maps should be posted on the wall). Encourage other groups to help add to each other's maps as each group presents. It's important to add words showing the relationship between linked concepts if a step or stage is missing. Other words that could be added on the line linking the words are simple words or phrases, such as "are," "can be," or "are part of." Finally, cross-link other relevant relationships--often drawing lines going across to other group maps.

Conclude the instruction by announcing that the students have visually created a definition of agriculture.

Show the Discover Agriculture movies or othes that are "Additional Resources" noted with this lesson on the Utah Agriculture in the Classroom website. After viewing some of the movies, ask students to make additions to their concept webs.

Additional Activities

Add to the concept map by linking natural resources used.

Keep the concept webs up for a few days, allowing students to add to them.

Vocabulary

Farming:

The production of food and fiber derived from plants and animals. Farmers must understand economics, business, mathematics, and the science involved in getting their crops and animals to market. The science involved in agriculture includes the knowledge of ecosystems, soil, water,

weather, chemistry, and plant and animal biology.

Food:

Made from the raw products taken from the farm. Some products, like corn, may be consumed in their "raw" state or processed into an entirely different product like corn chips, soda, peanut butter, detergents, or medicines. Some of our farm "raw" food products need to be processed into a more palatable and digestible form before they can be eaten. Wheat, for example, is the most important grain in the U.S. We would have to eat hundreds of "raw" or whole-wheat seeds to get the same nutrition we can get more easily from processing the wheat into flour and then baking bread. Bread is a more palatable way to eat wheat. Flour, of course, is used in hundreds of other products: tortillas, pastas, doughnuts, muffins, pancakes, cookies, pie crusts, and pretzels, just to name a few. The food industry is the processing and distribution of food.

Fabric:

Natural fibers are produced on the farm; the two most important fibers are wool and cotton. These fibers are made into thread or yarn and then knitted or woven into fabric or cloth, then finally made into gloves, socks, suits, coats, and other products including blankets, carpets, and curtains.

Forestry:

Many forests are cultivated. Agriculturally, many private forests are grown to provide paper and other wood products.

Flowers:

Flower and nursery crop production are part of the "green industry" which includes turf. The primary use of these "crops" is for aesthetics or beauty.

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