



Food Systems Feed the World

Social Studies

Purpose

Students will list the steps and processes of our food system, gain an understanding of hunger as it relates to the physical well-being, culture, and geographic location of all people, and locate geographic locations on simple maps.

Time: 1 hour

Level: Elementary, Middle

Materials

- “Who Makes Your Cereal?” worksheet
- “Food System Chain” worksheet (one per group)
- Stapler

Background

Hunger affects the well-being of people, nations, and the world. When people are healthy, strong, and well nourished, they have the energy, creativity, security, and courage to solve problems, create great works of art and music, contribute to scientific advances, and live their daily lives with dignity and joy, ultimately advancing civilization. People who are not well nourished do not have the energy to work or to learn and often need constant medical care. The cost is lost potential and increased health care costs.

Getting our food from farm-to-fork involves several steps and many hands. This system needs to be understood before students can grapple with the question, “Why does hunger exist?”

In a highly efficient modern agricultural system (like the United States) the following steps take place during food production:

- Preparation (getting ready to grow)
- Growing
- Harvesting and transportation
- Storage
- Processing
- Distribution
- Preparation and consumption

Transportation and an ample supply of energy (fuel and electricity) are required for every step. Each step also involves a great number of people including bankers, agriculture suppliers, extension workers, farmers and farm workers, truck drivers, food handlers, millers, and bakers. Weather conditions, energy supplies and price, storage facilities and transportation problems can affect this “food chain.” In countries that are highly efficient and productive (the United States has a surplus of food), a breakdown in the system can usually be fixed or rerouted quickly. However, developing countries don’t always have the geography (climate or weather conditions), infrastructure (noted in the steps above), monetary system (most are poor), or political system that allows them the ability to feed more than just their families. These are some of the major reasons why hunger exists in the developing world, but the reasons for hunger in the U.S. center more on poverty. Some people don’t have enough money to purchase food. Poverty (beyond the scope of this lesson), affects millions of Americans. Working with local food banks is one way your students can help.

Activity Procedures

1. Ask the students where we get our food. (If they say the grocery store, ask them where grocery stores get the food.)
2. Share with students the steps involved in “putting food on the table.”
3. Ask students what people need to do at each step. Some prompting questions and possible answers may include:

Getting ready to grow food:

- What does the farmer need to begin growing a crop? Seeds, fertilizer, equipment, and land.

Growing the food:

- What does the farmer need for the crop to grow? Sunshine; rain; hands to work, weed and care for the crop (labor); understanding of growing food; and the knowledge about land and agriculture.

Moving food from the field (harvesting and transportation):

- What is needed to harvest and transport the crop from the field? Hands (laborers); mechanical harvesters; trucks, trains, ships, or airplanes; fuel; satisfactory/safe roads.
- Where is the crop moved after it is harvested from the field? Some may be kept for personal use by the family, be taken to local markets to be sold, be taken to a farmers' co-op, and some may be taken to processing factories or be held in a storage facility. How far does the crop have to travel in each of these situations?

Storing the food:

- How might the food be stored? Canning, freezing, drying, salting, or being kept in a cellar.
- Where might the food be stored? Grain elevators, refrigerators, large freezers or controlled environments.
- Is this the only time that food may be stored? No, food will also be stored after processing before it is distributed for purchase.

Processing the food:

- What might happen to a tomato crop at a food processing factory? The tomatoes would be washed, heated and skinned and then smashed. The tomato smash would be mixed with salt and other spices to make ketchup. The ketchup would then be bottled and labeled for distribution to a market. What else might happen to tomato? What about other crops?

Distribution:

- How does a farmer sell a product? To a local farmer's market or directly to a local supermarket where individual negotiations are made; to a farmers' co-op where many farmers bring their products together to sell to a larger buyer.
- How is the crop resold to larger national or international markets? It could be sold through a large corporation or purchased by the government; it could be sold to an international buyer (either a supermarket or processing plant) over the Internet.

Preparing and consuming the food (at home or in a restaurant):

- Discuss how people need money to buy food unless they grow their own.
 - Discuss how people must understand how to use the food safely and choose foods that keep them healthy.
4. Have students complete the "Who Makes Your Cereal?" worksheet to get them thinking about food production.
 5. Divide class into groups of five. Give each group a copy (on different colors of paper) of the Food System Chain worksheet (attached). Ask students to cut apart the "links" and give one to each group member.

6. Ask them to think about the steps that foods must go through as discussed on the board. Allow ten minutes for students to answer on a separate sheet of paper the “what if” question listed on their “link” of the chain. Remind them that they should answer in three to four complete sentences.
7. Once everyone is finished, have all the students with the same “link” get into a group together. Have them discuss what they each wrote in their response to the question.
8. Each group should now write one paragraph, incorporating everyone’s ideas and any new ones the group may have added after the discussion.
9. Each group should present their final report to the class.
10. Ask students to regroup with the four other students with the same color “links.” Now regrouped, students should use a stapler to connect the links of their chain in the correct order.
11. Display chains and final paragraphs on a bulletin board titled “The Food System Chain is Only as Strong as its Weakest Link.”

Additional Activities

1. Review a world map. Ask the students to identify and write down the continents most severely affected by hunger. Ask the students to respond to the following questions concerning these areas:
 - a) What climatic or geographic similarities can be noted about these countries? How may the weather or insect populations affect the food supply? Could it be a factor for these countries?
 - b) Do these countries have stable governments? Can these citizens vote? Would or could that make a difference for this problem?
 - c) What can be done to help people overcome hunger or food insecurity in America? In the world?
2. Remind the children that there are many people who work hard to help people all over the world and that these people can be their “heroes.” Your students might be interested in donating some of their own time or talents.

Resources and Links

Visit the websites listed below for more information or to review the statistics discussed in this lesson plan.

- The official website of Hunger Free America. The site contains state specific statistics on hunger and school food programs.
www.uri.edu/endlunger/
- An international classroom for exploring the problems of hunger, malnutrition, and food insecurity. You will find sample materials and lessons, and an interactive forum for exchanging ideas and experiences around the world.
www.feedingminds.org
- World Hunger Notes is an online publication of the World Hunger Education Service. Students can submit their questions and have them answered by the educational staff.
www.worldhunger.org
- A teacher resource site. This extensive site not only contains resources on hunger, but on food consumption and obesity. Use the search option to narrow your possibilities.
www.ers.usda.gov

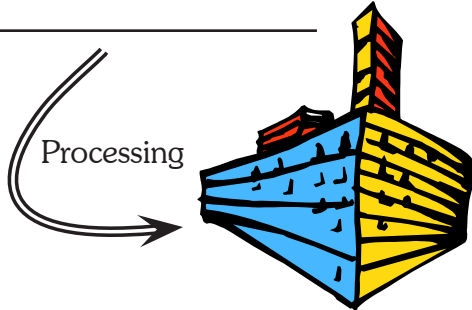
Who makes your cereal?

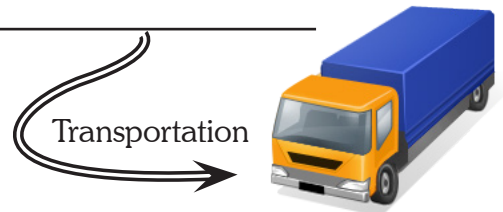


Production

Farmers and Many Others

Many businesses and industries depend on agriculture. Only two percent of our population is involved in growing all of our food. That's about two out of 100 people who are farmers. However, one in five people are employed in the processing, packaging, distribution, and retail sale of food. For each of the main links in the food chain think of any others along the way who may have helped get your cereal from the farm to you. Write the jobs of people involved one the lines next to each link (some hints are given).









From Wheat Seed to Bread

Number the order of the steps from wheat to bread.

- ___ The grain is sent to the mill.
- ___ A combine harvests the golden, ripe wheat.
- ___ The flour is sold and delivered to the bakery.
- ___ Fresh loaves of bread are sold or delivered to the store.
- ___ The wheat is planted in the soil.
- ___ The wheat is made into flour at the mill.
- ___ The bread is bought by customers like you.
- ___ The young green wheat plants grow.
- ___ The flour is made into bread at the bakery.
- ___ The wheat is stored in grain elevators and bins.

Adapted from material developed by Kathy Schellpeper, Nebraska AITC.



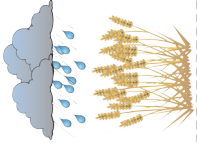
Getting Ready to Grow the Food

What might happen if the fertilizer needed for the best crop growth were not available to the farmer?



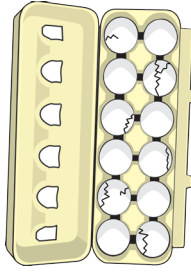
Growing the Food

What might happen if a hailstorm came the week the crop was to be harvested?



Harvesting & Transportation

What could happen to the crop during transportation?



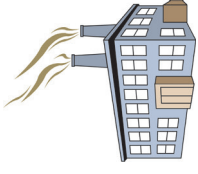
Processing

What might happen to a crop at a food processing factory?



Storing the Food

What might happen if the crop were not stored properly?



Distributing the Food

What might happen if you did not have money to purchase food?



Preparation and Consumption of the Food

What might happen if people consistently chose unhealthy foods?

