



FOOD FARM S & the FUTURE

is an educational program that teaches the importance of good nutrition, the science of agriculture and environmental sustainability. The exciting livestream you and your students experienced can be enhanced by using these lesson plans, as well as the other educational materials found on www.foodfarmfuture.com.

Keeping Food Safe explores the fact that real food is grown, not made. Farmers grow or raise the food we eat and the way farmers do this has evolved over thousands of years. Today's farmers need to be specialists in many different fields: biology, zoology, chemistry, hydrology, veterinary science, IT, sustainability and nutrition. Today, we'll trace the path of food along what is known as the supply chain. There are many people and processes involved in the supply chain and there are many ways that food needs to be protected to keep it safe. This activity will allow students to explore the supply chain and brainstorm ways they would keep our food from being contaminated.



KEEPING FOOD SAFE

Target Audience

Students in middle and high school Family and Consumer Science classes

Objective

- Explore the path food takes along the supply chain
- Investigate food safety issues along the supply chain
- Identify how food can become contaminated along the supply chain and develop and brainstorm ways to prevent it
- Identify some scientific disciplines involved in keeping the supply chain safe

How to Use This Program

Make copies of the handout. Prepare the materials for the activity in advance.

Purpose of Activity

Define, Identify Details, Apply Skills

21st Century Skills

Critical Thinking, Collaboration, Communication

Cognitive Level

Strategic and Extended Thinking

Class Time

45 minutes

Materials

- Cooked bratwurst on a bun
- Grated cheese
- Ketchup
- Mustard
- Banana
- Paper plate
- Poster board
- Markers

Activity

Present to the students a bratwurst in a bun on a plate. Top the bratwurst with cheese, ketchup and mustard. Also present a banana on a separate plate.

Tell the students you are going to explore the supply chain involved in getting the bratwurst, bun, cheese, ketchup, mustard and banana to consumers. Give the students the handout which illustrates the supply chain.

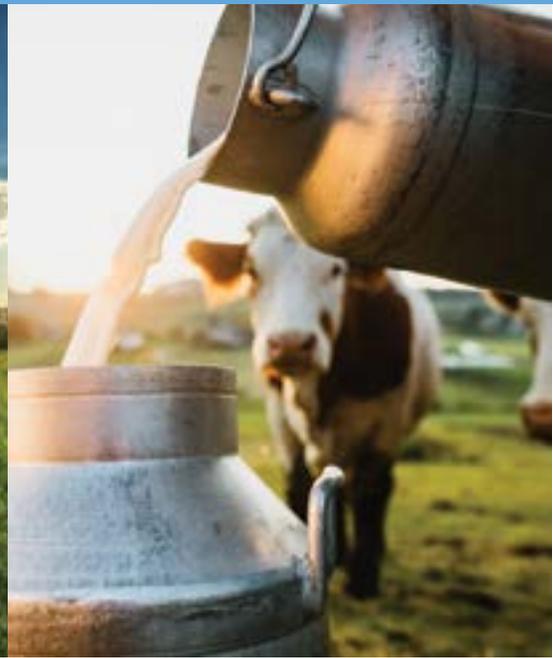
There are many people involved in the supply chain. Farmers grow or raise the food, processors transform the food from a raw material to a finished product, truck drivers transport the food to grocery stores, warehouse workers stock the food at the store and other employees

bring the food to the shelves for you to buy. So, what does science have to do with this? Biology and chemistry can tell us what bacteria are present in foods and what we can do to eliminate them. Farmers have to be aware of the entomology of insects that may invade their crops. They need to know enough about animal husbandry and anatomy to keep their livestock healthy. Proper hygiene is critically important at processing plants. Truck drivers and warehouse workers need to become experts at using sanitizers and other means to make sure the food we eat is free from contamination.

Ask what else could happen to food along the supply chain that could affect the safety of our food supply. List their answers on the board.



KEEPING FOOD SAFE



Now it's time for the students to explore the specific food items you set out and brainstorm ways the food could become contaminated and ways to keep it safe.

Procedure

1. Divide the class into six groups. Assign a food to each group (bratwurst, bun, cheese, ketchup, mustard and banana).
2. Have students begin researching their assigned food. Using poster board, let each team trace their food through the supply chain. Remind students that some foods are imported from other countries, so be sure to trace them from their origin. (Students can find out where a variety of foods come from by visiting the Economic Research Service site at www.ers.usda.gov).
3. Hang poster boards around the classroom and keep them up throughout the unit. As the teams learn more about the supply chain, they can add to or change the information.
4. Challenge the students to include all the people involved at each step (e.g., farmers, produce pickers, milkers, truckers, grocery workers, shelf stockers, restaurant workers, etc.). Have them list what science discipline would be important for those workers to be familiar with to do their jobs.
5. For each person the team identifies, they must include what that person does to help control the spread of bacteria. Students should label all the places where contamination of their food may occur, then write a strategy for preventing that particular contamination. For further research, have the students visit the Partnership for Food Safety Education at www.fightbac.org.
6. Have each team share its food journey with the class. The team that traces the banana should also address global transportation issues. Ask students: What do these foods have in common? Where do the similarities and differences occur along the supply chain?
7. Have each team add up the number of people they identified. Have them also identify all the science disciplines they discovered. Which food had the most people involved in the supply chain? Why?



SUPPLY CHAIN



FARM



TRANSPORTATION

PROCESSING



RETAIL

HOME