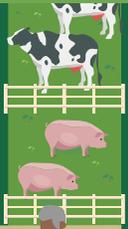




National Education Standards Alignment

Social Studies

Science



Lesson 7

Our Food's Journey

[Lesson Duration: 50 minutes]



Lesson Overview

Food often travels thousands of miles from where it is produced to where it is sold and eaten. Students will learn why this is so and consider the advantages and disadvantages. Students will critically examine and debate different scales of **food distribution** (local, regional, national, and global).



Learning Objectives

- Explain why and how food is transported long distances.
- Critically analyze the advantages and disadvantages of different scales of food distribution (local, regional, national, and global).



Essential Questions

- Why is food transported long distances?
- What are the pros and cons of local, regional, national, and global food distribution systems?
- Which scale of distribution has the greatest net benefit for your community? For society?



Materials

- Student handout
- Presentation slides
- *Food Distribution* primer
- FoodSpan Infographic



Resources

- *Food Distribution* primer (www.foodsystemprimer.org/food-distribution/)

Warm-up: How Far Did Your Meal Travel?

Social Studies
[10 minutes]

Ask students to choose a favorite meal and make a list of up to five main ingredients. For example, a burrito might include cheese, tomatoes, beans, cilantro and rice.

Distribute the **Food Map of the U.S. Handout**. Students should plot on the map where each ingredient was likely produced. Have them make their best guess, plot it on the map, then research to find out if their guess was correct. If any ingredient comes from outside the U.S., students should write the name of the ingredient and its country of origin in the right-hand column.

Encourage volunteers to share their maps and lists, and ask:

- *Approximately how far did the ingredients travel before reaching your plate? What does the distance tell you about our food system?*
- *Can you find any of these ingredients locally?*
- *How feasible would it be for you to eat only locally produced food?*
- *What foods would you have to give up if you ate only locally produced food?*

Ask: *What are some of the disadvantages of transporting food long distances?* Possible responses include an increase in **food miles** and **greenhouse gas** (GHG) emissions. “Eating local” is often promoted as an important way to reduce the climate impact of our diet. What we eat and how food is produced, however, generally has a greater impact on the climate than how far food travels.

Display the **U.S. Food System Greenhouse Gas Emissions slide**. Ask: *What percentage of U.S. food system GHG emissions is food distribution responsible for? (11%) What does this tell you about the impact of food miles?* Explain that while transporting food produces a lot of GHG emissions, the majority of food system GHG emissions come from production. For the typical American, cutting out animal products once a week would reduce GHG emissions more than following an entirely local diet.¹



Teacher Note: When researching the origin of an ingredient, students can search for the state or country that produces the most of that food. For example, using the search terms “U.S. state that produces the most tomatoes,” students would learn that 96% of tomatoes grown in the U.S. come from California.



Teacher Note: The term “local food” may mean different things to different people. It is typically defined as food that was produced within 100 to 250 miles from where the consumer lives, or food that a farmer sells directly to a consumer (e.g., at a farmers market).²

Main Activity: Why is Food Transported?

Social Studies, Science [15 minutes]

Have students pair up and discuss: *Can you name three reasons food is transported long distances?* Ask students to share their responses. Use these talking points to guide discussion:

Population density:

- Ask: *Can you think of places that might not have enough local farmland to support the local population?*
- Many large cities could not rely exclusively on local food, because they do not have enough nearby farmland to support their population.
- According to one estimate, if all the agricultural land in New York State was devoted to feeding New York City's population of more than 8 million, there would only be enough food to feed half of the city—with nothing left for the rest of the state.³

Out-of-season variety:

- Ask: *Can you think of reasons why transporting food long distances might provide consumers with a greater variety of food?*
- In northern latitudes, most food production stops during the winter. If people in those regions ate only local food, their options would be very limited unless they preserve foods to last the winter.
- Shipping food from Florida, California, Central and South America, and other southern locales

can provide people with year-round variety and nutritional diversity over the winter months.

- Display the **Top U.S. States in Fruit Production slide** to show how much we rely on warm growing areas for out-of-season variety.

Comparative advantages:

- Some regions are better suited than others for producing certain foods. For example, the Great Plains region is ideal for growing wheat because the crop requires a vast amount of space and a cool, dry climate. So, it often makes better sense for regions to bring in wheat from the Great Plains than to grow it themselves.
- Ask: *Can you think of other regions that have a comparative advantage in producing certain foods?*
- Examples include Florida and California, which have a year-round growing season for fruits and vegetables, and parts of Michigan, which have ideal soil conditions for growing blueberries.

“For most of human history... perishable foods were by definition local.”

– Susan Freidberg

Discuss: *What are the pros and cons of transporting food long distances? Could we do without it? If so, how?*



Photo credit: David Gubler, 2011 Creative Commons CC BY-SA 3.0
<https://creativecommons.org/licenses/by-sa/3.0/>

Main Activity: Debating Scales of Food Distribution

Social Studies
[20 minutes]

Divide the class into four groups. Assign each group a different scale of food distribution: local (from within 100-250 miles), regional (from your area of the country, e.g., U.S. Pacific Northwest), national, or global.

Instruct each group to prepare for a debate by making a list of the pros and cons of their scale. They can read the **Food Distribution primer** to further develop their arguments. Groups should be prepared to respond to the following:

- What are some benefits of relying on your scale of distribution for all your food needs?
- What are some potential drawbacks?
- What kinds of transport vehicles does your scale of distribution rely upon? How do the energy use and GHG emissions compare for these different vehicles? (Direct students to the vehicle emissions/energy use chart in the primer.)
- How would using your scale of distribution affect the local economy?
- How would relying on your scale of distribution affect nutritional diversity for your community?
- Would preserving food (e.g., canning and freezing) make relying on your scale of distribution more feasible?

Debate as a class: Which scale of food distribution offers the greatest net benefit for your community? For society?

Wrap-up: Reflection: Food Distribution and Me

[5 minutes]

Have students write a journal entry in response to one of these prompts: *Do the benefits of transporting food long distances outweigh the costs? Will what you learned today about food distribution change the way you shop or eat? Why or why not?* Optional: Have students share their responses.



Share Your Knowledge: Have students share what they've learned by tweeting the most striking food distribution fact from the lesson. What should others know about food distribution? Tag **#fooddistribution** and **#foodspan** to join the conversation.

Extensions:

Revisiting the Infographic (Social Studies)

Distribute copies of the **FoodSpan Infographic** (students may already have their own from previous lessons). Ask students to identify parts that represent food distribution. Ask: *Do these accurately and fully represent what we learned about food distribution? If not, what could we add to make the infographic more accurate?* Working individually or as a class, have students draw their own versions, create a collage, or add images to the existing infographic. Share photos of students' work on social media and tag #foodspan.

Eat Local Challenge (Social Studies, Health)

Students will experiment with eating as much locally grown food as possible for an entire day or week. Have them write a reflection about the experience: *How difficult was it? Was it possible to eat local all the time? What are the barriers to eating only local food? What foods did you need to eliminate from or add to your diet?*

-
1. Weber CL, Matthews HS. Food-miles and the relative climate impacts of food choices in the United States. *Environ Sci Technol*. 2008;42(10):3508-13.
 2. Martinez S, Hand M, Da Pra M, et al. *Local Food Systems: Concepts, Impacts, and Issues*. USDA Economic Research Service; 2010.
 3. Peters CJ, Bills NL, Lembo AJ, Wilkins JL, Fick GW. Mapping potential foodsheds in New York State: a spatial model for evaluating the capacity to localize food production. *Renew Agric Food Syst*. 2008;24(1):72-84.