

# *Our Food: Where Does it Come From? Where is it Going?*

## OVERVIEW

Students will learn how food is traded and transported all over the world, and assess the advantages and disadvantages of this global economic network. Drawing on assigned readings and information presented in the *Our Global Kitchen* exhibition, students will explore the economic, cultural, and environmental impacts of the food trade, and offer potential solutions.

- **Before Your Visit:** Students will brainstorm about the original needs to which the current global food trade developed in response, and discuss the advantages and disadvantages of transporting food over long distances. This brainstorming session will be followed by reading an assignment about food distribution and transport.
- **During Your Visit:**
  - In *Our Global Kitchen*, students will focus on the Trade section, where they will gather evidence of the economic and cultural impacts of the food trade, both positive and negative.
  - In the Windowfarms display, students will discuss the advantages and disadvantages of local, small-scale food production and the challenges of feeding a growing global population.
- **Back in the Classroom:** Students will write a short essay comparing the advantages and disadvantages of trading and transporting foods over long distances.

### NYS Social Studies Core Curriculum:

#### Standard 4: Economics

The study of economics requires an understanding of major economic concepts and systems, the principles of economic decision making, and the interdependence of economies and economic systems throughout the world.

## BACKGROUND FOR EDUCATORS

Since the beginning of agriculture, food has frequently been consumed far from the farm. It travels across a complicated network with consequences for producers, distributors, consumers, and the plant and animal species being traded, as well as for the environment.

## BEFORE YOUR VISIT

### Activity: Trade and Transportation

**Objective:** Students will explore the need for trading and transporting food over long distances and reflect why the need arose. They will consider some of the problems created by current practices, as well as possible solutions.

1. Divide students into groups of four or five. Have each group discuss why they think humans started transporting food, and write down four. Then have each group brainstorm the advantages and disadvantages of transporting food over long distances and list four of each.

This can be opened up for class discussion and a comprehensive list can be written on the board.

2. Have students read “Food Distribution and Transport” (included at end of PDF) from the Johns Hopkins Center for a Livable Future. Students can stay in groups but each student should read this article independently.

Plan how your students will explore the *Our Global Kitchen* exhibition using the student worksheets.

Distribute the worksheets to the students. You may want to review the worksheets and the map of the exhibition with them to make sure they understand what they are to do.

Ask each group to answer the following questions:

- Why is transporting food necessary today?  
*(Answers may include: to feed densely populated areas that could not acquire enough food locally; to provide consumers with greater variety; to capitalize on the productivity of certain agricultural areas)*
- What conditions allow some crops to be grown and or animals to be raised in specific locations?  
*(Answers may include: climate; topography; soil; political and economic conditions)*
- What are some of the unintended consequences of food distribution and transport? Why do they come about?  
*(Answers may include: small local producers cannot compete with large-scale producers and global distribution networks; transporting food over far distances contributes to climate change by burning fossil fuels)*
- Revisit the list of advantages and disadvantages brainstormed by each group earlier. Add to this list as a class.  
*(Answers will vary.)*

## DURING YOUR VISIT

### **Our Global Kitchen: Food, Nature, Culture**

#### **3rd floor (45 minutes)**

Students will visit the Grow section of the exhibition and observe how humans have created countless varieties of crops and livestock adapted to local conditions and grow food in a multitude of ways. Next, students will visit the Trade section and continue to gather evidence of the economic, cultural, and environmental impacts of trading and transporting food.

#### **Windowfarms**

#### **1st floor, Weston Pavilion (15-30 minutes)**

In the Windowfarms display, students will discuss the advantages and disadvantages of local, small-scale food production and the challenges of feed a growing global population. Vertical farming is a way to grow food where space is limited. Have students observe and ask questions, at the Windowfarms display and to think about:

- What food growing and trading challenges does vertical farming solve?  
*(Answers may include: doesn't require a lot of space/soil, system can be produced and distributed locally so environmental impact is limited, gives access to fresh food)*
- What challenges doesn't it solve?  
*(Answers may include: can't feed lots of people, size and weight of plants is limited)*

## BACK IN THE CLASSROOM

### **Activity: Tying it All Together**

**Objective:** Students will synthesize the information they've gathered from background reading (see links) and the Museum exhibition for a short essay about global food distribution.

Have students reassemble into the same small groups. Using information synthesized from the background reading and gathered in the exhibition, have them analyze the food trade. Essays should include a case study from the Aztec market. Have students choose a food from the market that is culturally important in another part of the world today (e.g. tomatoes in Italy, chocolate in Switzerland, chili in Asia). Have them research where and when this food was originally domesticated and how and when it has been traded globally.

The essays should incorporate an in-depth examination of the strengths and limitations of current practices for transporting and distributing food, as well as recommendations for the future.

## Background Readings

- [amnh.org/ourglobalkitchen/more](http://amnh.org/ourglobalkitchen/more)
- [nature.com/nature/journal/v418/n6898/pdf/nature01019.pdf](http://nature.com/nature/journal/v418/n6898/pdf/nature01019.pdf)
- [ers.usda.gov/](http://ers.usda.gov/)
- [nrdc.org/food/wasted-food.asp](http://nrdc.org/food/wasted-food.asp)
- Cambridge encyclopedia of food

# Student Worksheet: *Where Does Our Food Come From? Where Is It Going?*

Today you will observe how humans have created countless varieties of crops and livestock adapted to local conditions and raise food in a multitude of ways, and gather evidence of the economic, cultural, and environmental impacts of trading and transporting food.

## GROW SECTION

### 1. Agriculture mini-dioramas, vertical gardens, & “Future of Growing” cases

All plants require water, light, and a growing medium (e.g. soil) in order to thrive.

Compare and contrast farming methods. What techniques help people farm successfully around the world? What are some challenges they face?

How are farmers addressing these challenges?

## TRADE SECTION

### 2. “Modern Markets” map & trade interactive

Food might come from your garden — or from the other side of the world. Explore how and why foods move around the world.

What are some commodities that countries trade?

What are the five most common foods imported and exported worldwide?

Which countries are the top importers and exporters of each food? Use the chart.

What might be an economic impact (advantage or disadvantage) of the modern system of importing and exporting these products worldwide?

Food	Top Importer	Top Exporter

**3. Food Ships Kiosks**

Choose two foods from the interactive and track their trade. What might be an advantage and a disadvantage of each particular method of transport?

Name of Crop	Origins	Destinations	Advantage	Disadvantage

**4. Food Waste**

Examine the graphs and information on this wall panel. Where along this pipeline is most food wasted by high and middle-income countries?

Where along this pipeline is most food wasted by low-income countries?

What are the economic and environmental impacts of wasting food at any point along the pipeline?

**5. Aztec Marketplace Diorama**

Food and other items were carried to this capital city from all over the thriving Aztec Empire (now Mexico).

Name some foods that are for sale.

What common foods are missing? Why?

Find chocolate in different forms in the marketplace. How did the Aztecs use it?

List other countries or cultures that are commonly associated with foods found in the Aztec marketplace today.

**6. Too Little, Too Much**

Look for this wall panel beyond the kitchen in the exhibition. If our food is traded widely and globally, why is one out of eight people around the world hungry? What are the cultural implications of this?

*Student Worksheet: Where Does Our Food Come From? Where Is It Going?***ANSWER KEY**

Today you will observe how humans have created countless varieties of crops and livestock adapted to local conditions and raise food in a multitude of ways, and gather evidence of the economic, cultural, and environmental impacts of trading and transporting food.

**GROW SECTION****1. Agriculture mini-dioramas, vertical gardens, & “Future of Growing” cases**

All plants require water, light, and a growing medium (e.g. soil) in order to thrive.

Compare and contrast farming methods. What techniques help people farm successfully around the world? What are some challenges they face?

*(Answers may include: large-scale farming produces high yields at relatively low prices; uses chemicals and a great deal of water; depletes the soil)*

How are farmers addressing these challenges?

*(Answers may include: in densely populated urban areas farmers use rooftop garden beds, vertical gardens, and hydroponic technology)*

**TRADE SECTION****2. “Modern Markets” map & trade interactive**

Food might come from your garden — or from the other side of the world. Explore how and why foods move around the world.

What are some commodities that countries trade?

*(Answers may include: spices, animals, processed foods, fuel)*

What are the five most common foods imported and exported worldwide?

*(Answers may include: bananas, maize, soy beans, wheat, beer)*

Which countries are the top importers and exporters of each food? Use the chart.

What might be an economic impact (advantage or disadvantage) of the modern system of importing and exporting these products worldwide?

Food	Top Importer	Top Exporter
<i>A: Banana</i>	<i>A: USA</i>	<i>A: n/a</i>
<i>A: Maize</i>	<i>A: Japan</i>	<i>A: USA</i>
<i>A: Soy beans</i>	<i>A: China</i>	<i>A: Brazil</i>
<i>A: Wheat</i>	<i>A: Germany</i>	<i>A: France</i>
<i>A: Beer</i>	<i>A: n/a</i>	<i>A: Netherlands</i>

*(Answers may include: Advantage: Trade helps the economies of countries exporting foods worldwide; it means there is a demand for products they produce. Disadvantage: Long-distance transport is not good for the environment because of fossil fuel emissions; If the world is depending on only 4 or 5 main crops, we may be at risk of depleting them.)*

**ANSWER KEY****3. Food Ships Kiosks**

Choose two foods from the interactive and track their trade. What might be an advantage and a disadvantage of particular method of transport?

Name of Crop	Origins	Destinations	Advantage	Disadvantage
<i>A: Banana</i>	<i>A: Central and South America</i>	<i>A: Japan, Russia</i>	<i>A: ripening can be delayed by picking green bananas, which have an extended life for long trips; shipping without a bag saves money</i>	<i>A: chilling bananas for long trips can cause damage to fruit; shipping without a bag causes the bananas to ripen faster</i>
<i>A: Lamb</i>	<i>A: New Zealand</i>	<i>A: Europe, Japan, North America</i>	<i>A: shipping after processing is good for preservation if meat is kept chilled or frozen; frozen meat sells for less money than chilled meat, but also costs less to ship</i>	<i>A: shipping chilled meat is a trade off between retail price and shipping cost; exporting chilled meat is hard and expensive to preserve for long trips, but consumers pay more as well</i>

**4. Food Waste**

Examine the graphs and information on this wall panel. Where along this pipeline is most food wasted by high and middle-income countries?

*(Answer: consumption)*

Where along this pipeline is most food wasted by low-income countries?

*(Answer: post-harvest handling)*

What are the economic and environmental impacts of wasting food at any point along the pipeline?

*(Answer: More than 30% of food (or 1.43 billion tons) never gets eaten. Economically, this is a waste of money spent to grow, harvest, and ship food. Environmentally, this is a waste of fertile land used to grow the food as well as unnecessary carbon emissions released into the environment from transporting food over long distances.)*

**5. Aztec Marketplace Diorama**

Food and other items were carried to this capital city from all over the thriving Aztec Empire (now Mexico).

Name some foods that are for sale. *(Answers may include: peppers, tomatoes, corn)*

What common foods are missing? Why?

*(Answers may include: bread, cheese, chicken; they weren't produced locally and had yet to reach the region via trade)*

Find chocolate in different forms in the marketplace. How did the Aztecs use it?

*(Answers may include: as a beverage, currency, tribute to conquerors, offerings to gods)*

List other countries or cultures that are commonly associated with foods found in the Aztec marketplace today.

*(Answers may include: Italy and tomatoes; Switzerland and chocolate)*

**6. Too Little, Too Much**

Look for this wall panel beyond the kitchen in the exhibition. If our food is traded widely and globally, why is one out of eight people around the world hungry? What are the cultural implications of this?