

FOOD SECURITY



Overview This lesson helps learners explore the geographic, cultural, and social justice dimensions of their food system. Changes in the food system among the Inuit culture serves as an example for examining the concepts of food security and food sovereignty. This lesson is designed to build students' understand of the social, cultural, economic and environmental dimensions of the food system. Students should have some familiarity with the agricultural systems the community relies on (near and far).

Imagine all the food mankind has produced over the past 8,000 years. Now consider that we need to produce that same amount again — but in just the next 40 years if we are to feed our growing and hungry world.

Paul Polman

Materials and Preparation

For Activity A, gather hard copy maps of the region (one map for each group of 4-6 students). If hard copy maps are not available, find digital maps and project them.

Activity D suggests that students share work using WeExplore, a free online learning environment.

Subject Areas

biology, life science, ecology, geography

Topics / Concepts

food system, food processing, import, export, food security, food sovereignty, 'country foods' (native Inuit foods)

Vocabulary (definitions on page 4)

adaptations, community, competition, country food, ecosystem, food security, food sovereignty, food system

ACTIVITY A: THE FOODS I'M FROM

In this lesson, students share experiences and traditions related to food by writing an autobiographical food poem.

1. Direct students to read the sample poems, individually, in pairs, or small groups. As they read, students can annotate the poems using one or more strategies:
 - » Marking words that convey tastes, smells, sights, and sounds sights.
 - » Identify unfamiliar words and developing preliminary definitions based on context clues.
 - » 'Talking to the text': Posing questions, responses, reactions, or 'I wonder' statements for further discussion.

2. The discussion questions in the Student Pages support learners to focus more on word meaning and tone. Answer will vary.

Questions for Reflection

- » *What words does the author use to describe the food(s) important to him/her?*
- » *What is the author's overall feeling about the topic? Describe the tone.*
- » *What words does the author use to convey this tone? Identify specific words and phrases.*

Differentiation/Adaptations:

- » *The lesson is designed to engage students in sharing their own experiences. This provides immediate opportunities to differentiate based on students' prior knowledge.*
- » *Encourage students to supplement their writing with illustrations, pictures, or show and tell. Use students' work as the basis of a class website, book, or display.*

ACTIVITY B: COMMUNITY FOOD SYSTEMS MAP

In this activity, students map places in their community (and beyond) related to the food system. The Students Pages list 8 different categories to map (places where food is grown, places that distribute food, etc.) There are several ways to complete the mapping depending on the type of document(s) you use and the grouping of students. Options:

1. Divide students into groups and assign each group one or more categories. Groups conduct research as needed, write information on sticky notes, and add their work to a single hard copy of a map. This allows a full group review of one map.
2. Divide students into groups, but have each group complete its own map using either a hard copy or a digital file. In this case, individuals students within the group research different categories. Groups can present their maps, allowing for comparisons among groups.

Questions for Reflection

- » *Which aspects (categories) of the food system were the easiest aspects to identify? Which were most difficult? **Answers will vary, but ask students why they think the category was easy or difficult. For example, students may find it easy to identify places that sell food (Category C) since these places are visible and students may have been there. On the other hand, students may not know global or national sources of imported foods (Category D).***
- » *What are some of the key connections among the elements in your community's food system? **Again, answers will vary. Scaffold this by asking students to identify a connection between 2 categories. Ex: How are places that process foods connected to places that sell food? (Processed foods are sold at places like stores or bakeries.) Then build on this by drawing more connections.***
- » *What are the boundaries of your community's food system? **Answers will vary. Some students may say the boundary is local, while others may say it's global (considering imports/exports). This is a good opportunity to point out the vast geographic connections within and across food systems.***
- » *If food is so important, why are certain aspects of the system hidden or difficult to identify? **Answers will vary. Ask students to consider how often they hear about where foods come from or how foods are produced compared to how often students hear media messages about food's taste or price.***
- » *What other questions does this activity raise? **Answers will vary.***

ACTIVITY C: READING SELECTION: HEALTH, CULTURE, AND SUSTAINABILITY

In this activity, there is a reading selection divided into 3 sections. Section 2 is the shortest/easiest; sections 1 and 3 introduce more vocabulary. Assign the reading using one or more of the following strategies and adaptations:

1. Individual reading: Encourage students to read silently in small groups rather than taking turns as a full class. To accommodate different reading levels/speeds, assign Section 2 to struggling readers.
2. Small groups present sections: Divide the class into groups of 3-4 students. Assign a section of the reading to each group. (You will have more than one group per section.) Groups compile main ideas, themes, questions or other information you suggest and present their findings with the class. As each group presents, other students take notes.
3. Jigsaw method 1: As above, assign sections of the reading to groups of students. After each group compiles its information, the students mix so that all sections of the reading are represented in a single group. Each student then teaches/presents their section to the other group members.
4. Jigsaw method 2: In this method, students “jigsaw” within the same group. First, each member of the group is assigned a different section of the reading. Then, within the group, members teach each other.
5. In any of the methods, individuals and/or groups can turn in notes, outline, etc. as appropriate.

ACTIVITY D: EVALUATING YOUR COMMUNITY’S FOOD SYSTEM

This activity uses WeExplore (<http://we-explore.com>), an online learning environment that enables students to create and share an inquiry-based story using images, maps, videos, field notes, and links to other websites. Students can work in teams and collaborate with peers on individual storylines.

1. Create a login for WeExplore (registration is free and teachers can create a teacher account to manage their classes and class WeExplore projects using LT Basecamp at <http://ltbasecamp.com>).
2. Once logged in, students can create inquiry-based storylines using a variety of media and text.
3. Sample prompts for the student storylines include but are not limited to the following:
 - » Farmers’ markets
 - » Farm-to-school efforts
 - » Business or restaurants that produce foods locally
 - » Places where you can find foods important to the different cultures in your community

VOCABULARY DEFINED

- › adaptations: Changes that make an organism or species better suited to its environment
- › community: different populations that interact with each other in an ecosystem
- › competition: when two or more species use the same common limiting resource for survival
- › country food: “[what] Inuit use to describe traditional foods. Country food are things like arctic char, seal meat, whale, caribou etc. Originally these foods were consumed for day to day survival. Eating what the land and sea provided.” (Inuit Cultural Online Resource. Ottawa Inuit Children’s Centre.)

- › ecosystem: a biological community of interacting organisms and their physical environment
- › food security: “all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (Food and Agriculture Organization, 1996).
- › food sovereignty: a broader concept that considers the impacts of the food system on cultures, communities, and the environment. “the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.” (The Declaration of Nyéléni, 2007.)
- › food system: a series of interdependent elements that provide food to a community.

BREAKDOWN OF TIME NEEDED PER ACTIVITY

<i>Activity</i>	<i>Description</i>	<i>Time Estimate</i>
A. The Foods I’m From	Students write autobiographical poems describing experiences and traditions related to food.	45 minutes
B. Community Food System Map	Working in groups, students map places in their community (and beyond) related to the food system	30 minutes
C. Reading Selection: Health, Culture, and Sustainability	A reading selection introduces students to the concepts of food security and food sovereignty.	45-90 minutes
D. Share what’s happening in your community	Students evaluate the strength of their community’s food system using the principles of food security and food sovereignty.	Time Varies

OUTCOME AND ASSESSMENT

Outcomes	Assessment
<p>Students will understand that:</p> <ul style="list-style-type: none"> › Food and food traditions are a part of individual, family, and cultural identities. › A food system is a series of interdependent elements (human and non-human) that provides food to a community › Food security and food sovereignty are two concepts used to assess the overall food system. Food security focuses on access to enough healthy food, whereas food sovereignty also considers cultural traditions, economic justice, and environmental sustainability. 	<p>Students demonstrate their knowledge as they:</p> <ul style="list-style-type: none"> › Use imagery and poetry to describe the role of special foods and traditions in their culture. (Activity A) › Locate and map elements of the food system, and make local-global connections. (Activity B) › Compare and contrast food security and food sovereignty. (Activities B, C, D) › Research and share examples of community initiatives focused on improving food security and/or sovereignty. (Activity D)

ALIGNMENT TO STANDARDS

Common Core English Language Arts Anchor Standards

Key Ideas and Details

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. (Activities A, C)

Craft and Structure

4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. (Activities A, B)

Research to Build and Present Knowledge

7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. (Activities B, D)

8. Gather relevant information from multiple print and digital sources, assess the credibility of and accuracy of each source, and integrate the information while avoiding plagiarism. (Activity D)

Presentation of Knowledge and Ideas

4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task purpose and audience. (Activity D)

5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. (Activities B, D)

National Geography Standards

The World in Spatial Terms

Standard 2: How to use mental maps to organize information about people places, and environments in a spatial context. (Activities A, B, C)

Human Systems

Standard 12: The processes, patterns, and functions of human settlement.

Standard 13: How the forces of cooperation and conflict among people influence the division and control of Earth's surface. (Activities A, B, C)

Environment and Society

Standard 16: The changes that occur in the meaning, use, distribution, and importance of resources. (Activities A, B, C)

ADDITIONAL RESOURCES

Background Reading

(This information is provided to students in Activity B of the Student Pages.)

Growing, processing and consuming foods connect your community to the rest of the world. Foods come in from other regions, and foods grown in your region may be exported to other places. In addition, food wastes (from homes, restaurants, farms, stores, and processing facilities) go somewhere.

Together, these connections form a **food system**: a series of interdependent elements that provide food to a community. Note that food systems are comprised of multiple **elements**: people (farmers, gardeners, business people, and consumers), businesses and institutions (stores, processing facilities, governments), non-human elements of the natural world (soil, water, air, animals, etc.), and the actions of these participants.

The food system includes the places, people, and resources that produce, grow, process, transport, distribute, sell, share, and dispose of food.

(This information is provided to students in Activity C of the Student Pages.)

Food systems change along with other parts of culture. Contact with other traditions, new technologies, or shifts in environment conditions are all factors that can impact diet, nutrition, and the way people obtain their food. The case of the Inuit food system provides an example.

Changes in diet and food availability among the Inuit

The traditional Inuit diet consisted of meat and fat from hunted species, including seals, whales, caribou, and fish. Berries and a few herbs made up a very small proportion of the diet. These traditional foods are known as "country foods."

Country foods provided the Inuit with a healthy diet. The meat contained all the essential nutrients, and blubber, oil, and fat provided good sources of heat-producing energy. Country foods are also an important part of Inuit identity, history, and culture.

Over centuries, Inuit communities came into contact with Europeans and cultures from other regions of the world. This introduced Arctic communities to new foods as well as different ways of obtaining and preparing food. One big change is the importation of non-traditional foods such as canned fish and meats, and highly processed 'junk' foods.

While greater variety of foods can have benefits, these “modern”, foods have some drawbacks:

- » Fresh foods are very expensive because of the transportation costs.
- » “Junk” food is more affordable since it often contains some form of corn--a crop which is subsidized in the United States. (This means the government provides money to farmers to help them grow corn. This lowers the price of the corn.)
- » Junk foods are creating more dental and health problems, including diabetes.

Impacts of climate change

Climate change is having further impacts on the availability of healthy country foods. For more than 20 years, indigenous hunters and elders in the Arctic have reported about changes in their environment. They have reported that thinning sea ice makes hunting much more dangerous, and that seal and fish species are moving northward, making them less accessible. Permafrost (land that is frozen year round) is thawing, and this is eroding shorelines that once served as hunting routes. Formerly safe travel routes had become insecure due to a warming climate and melting ice. In addition, warmer temperatures mean that meat stored outdoors is going bad.

Community Efforts to Improve Health and Maintain Cultural Identity

The changes in diet among the Inuit bring up the question of **food security**. Food security means that “all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (Food and Agriculture Organization, 1996).

But there is more to consider than just access to food. What about the important cultural traditions reflected in Inuit country foods? What about the how the foods are produced? These questions are captured in the concept of **food sovereignty**. Food sovereignty is a broader concept that considers the impacts of the food system on cultures, communities, and the environment. These ideas are outlined in the [The Declaration of Nyéléni](#), a document developed in 2007 by 500 representatives from more than 80 countries. The document states:

Food sovereignty is “the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.” The Declaration of Nyéléni, 2007 27 February 2007.

Thus, while food security emphasizes **access** to a sufficient **amount** of healthy food, food sovereignty goes further and aims for a food system that maintains ecological health; supports social justice and the local economy; and uses culturally appropriate food production methods in farming, fishing, and other agricultural practices.

Today, Inuit are using several strategies to improve food sovereignty. They are:

- › Establishing sharing networks within and between communities so that families without hunters can get more access to country foods.
- › Developing local commercial sources of country food. Examples include stores such as Iqaluit Enterprises, the Country Food Market, and the Iqaluit Sell/Swap group on Facebook.
- › Using the kitchens of community buildings (such as schools) to provide a place for people to prepare food and share cooking skills

Food Security

Student Pages

Activity A) The Foods I'm From

Introduction

Food is a part of every culture and is reflected in specific foods, meals, traditions, and practices. What foods or traditions are important to you, your family and community? In this activity, you will write a short poem to answer this.

Directions

Read the sample poems. Notice that each stanza begins with "I am from." As you read or listen, pay attention to the words that describe tastes, smells, sights, and sounds. Then answer the questions that follow.

Sample poem #1

*I am from red beans and rice
Hot and steamy in my face*

*I am from fried chicken that sizzles in the pan
Music to my ears*

*I am from sweet potato pie
Creamy orange and brown 'round the edge*

*I am from Sunday dinner
"Thank you for this food" and "Clean your plate"*

Sample Poem # 2

*Growing up my favorite food was corn on the cob
My dad would grow it while on the job*

*As the son of a farmer we grew our own food
This wholesome food improved our mood*

*We would plant our seeds in early spring
By the middle of the summer they were in full swing*

*Come the fall they were ready to eat
Corn on the cob is a delicious treat*

Questions

- What words does the author use to describe the food(s) important to him/her?

- What is the author's overall feeling about the topic? Describe the tone.
- What words does the author use to convey this tone? Identify specific words and phrases.

Write your own poem

You will use the above structure to develop your own poem. Begin each stanza with "I am from."
Include at least 3 stanzas.

- Include words and details that describe **tastes, smells, colors, textures, sounds or sayings**.
- Your poem can be about a memory or event related to food: a favorite meal, a family celebration you're planning, or an experience you'd like to have.
- You could also write about experiences related to growing or obtaining food, such as gardening, farming, hunting, fishing, farming, or bartering.

After you develop your poem, share your work with a partner or group. Use the questions provided after the sample poems to guide listening, discussion, or written reflection about your classmates' work.

Activity B) Mapping Your Community's Food System

Introduction

Growing, processing and consuming foods connect your community to the rest of the world. Foods come in from other regions, and foods grown in your region may be exported to other places. In addition, food wastes (from homes, restaurants, farms, stores, and processing facilities) go somewhere.

food system: a series of interdependent elements that provide food to a community

Together, these connections form a **food system:** a series of interdependent elements that provide food to a community. Note that food systems are comprised of multiple **elements:** people (farmers, gardeners, business people, and consumers), businesses and institutions (stores, processing facilities, governments), non-human elements of the natural world (soil, water, air, animals, etc.), and the actions of these participants.

In this activity, you will map elements of your community's food system.

Directions

(Photo credit: Creative Change)



Review the following list of places in the food system, such as places to grow food and places to buy it. Mark each place on a map of your community using sticky notes or other method.

- A. Places that grow or produce food, (such as farms, gardens, pastures, apiaries)
- B. Places where people can fish, hunt, or gather food directly from the environment. Identify the specific foods, and indicate whether they are native to the region.
- C. Places that process foods (cider mills, bakeries, grain mills, meat packing plants)
- D. Places that sell or provide foods (grocery stores, farm stands, food banks, restaurants)
- E. Global or national sources of food imports
- E. Places where food is sent or sold to (other states or countries?)
- F. Places where agricultural wastes go (landfills, compost centers, farms)
- G. Places where decisions about food-related policies are made (government offices, community organizations)

Questions for discussion

1. Which aspects of the food system were the easiest aspects to identify? Which were most difficult?
2. What are some of the key connections among the elements in your community's food system?
3. What are the boundaries of your community's food system?
4. If food is so important, why are certain aspects of the system hidden or difficult to identify?
5. What other questions does this activity raise?

Activity C) Reading Selection: Health, culture, and sustainability

Introduction

Food systems change along with other parts of culture. Contact with other traditions, new technologies, or shifts in environment conditions are all factors that can impact diet, nutrition, and the way people obtain their food. The case of the Inuit food system provides an example. Read one or more parts of the three-part reading as directed by your teacher.

1. Changes in diet and food availability among the Inuit

The traditional Inuit diet consisted of meat and fat from hunted species, including seals, whales, caribou, and fish. Berries and a few herbs made up a very small proportion of the diet. These traditional foods are known as “country foods.”

Country foods provided the Inuit with a healthy diet. The meat contained all the essential nutrients, and blubber, oil, and fat provided good sources of heat-producing energy. Country foods are also an important part of Inuit identity, history, and culture.



Figure 1

The Inuit Way: A Guide to Inuit Culture. 2006

Over centuries, Inuit communities came into contact with Europeans and cultures from other regions of the world. This introduced Arctic communities to new foods as well as different ways of obtaining and preparing food. One big change is the importation of non-traditional foods such as canned fish and meats, and highly processed 'junk' foods.



Canned and processed foods have been introduced to the Inuit diet. <http://ccadapt.ca/sarafoodsecurity/>

While greater variety of foods can have benefits, these “modern”, foods have some drawbacks:

- Fresh foods are very expensive because of the transportation costs.
- ‘Junk’ food is more affordable since it often contains some form of corn—a crop which is subsidized in the United States. (This means the government provides money to farmers to help them grow corn. This lowers the price of the corn.)
- Junk foods are creating more dental and health problems, including diabetes.

2. Impacts of climate change

Climate change is having further impacts on the availability of healthy country foods. For more than 20 years, indigenous hunters and elders in the Arctic have reported about changes in their environment. They have reported that thinning sea ice makes hunting much more dangerous, and that seal and fish species are moving northward, making them less accessible. Permafrost (land that is frozen year round) is thawing, and this is eroding shorelines that once served as hunting routes.

Formerly safe travel routes had become insecure due to a warming climate and melting ice. In addition, warmer temperatures mean that meat stored outdoors is going bad.

3. Community Efforts to Improve Health and Maintain Cultural Identity

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But there is more to consider than just access to food. What about the important cultural traditions reflected in Inuit country foods? What about the how the foods are produced? These questions are captured in the concept of **food sovereignty**. Food sovereignty is a broader concept that considers the impacts of the food system on cultures, communities, and the environment. These ideas are outlined in the [The Declaration of Nyéléni](#), a document developed in 2007 by 500 representatives from more than 80 countries. The document states:

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Thus, while food security emphasizes **access** to a sufficient **amount** of healthy food, food sovereignty goes further and aims for a food system that maintains ecological health; supports social justice and the local economy; and uses culturally appropriate food production methods in farming, fishing, and other agricultural practices.

Today, Inuit are using several strategies to improve food sovereignty, such as:

- Establishing sharing networks within and between communities so that families without hunters can get more access to country foods.
- Developing local commercial sources of country food. Examples include stores such as Iqaluit Enterprises, the Country Food Market, and the Iqaluit Sell/Swap group on Facebook.
- Using the kitchens of community buildings (such as schools) to provide a place for people to prepare food and share cooking skills

Passing down traditional knowledge to youth is an important part of the solution. Denali Whiting, a youth in Kotzebue, Northwest Arctic, says, "Inuit were and are responsible for taking care of the resources we have. Young people today need to understand what is happening and learn from our elders and other community members ways that we can help maintain our resources in a way that is respectful to our cultural traditions."

Questions or analysis activity

1. What is the difference between food security and food sovereignty? Consider factors such as culture and the environment.
2. What specific terms and phrases help you understand the difference?
3. What evidence from the texts tell of the importance of food security and food sovereignty?
4. How do you feel about the food in your own community? Is there equal access and a sufficient amount?

Activity D) Share what's happening in your community

Let's use WeExplore. WeExplore (<http://we-explore.com>) is an online learning environment that enables you to create and share an inquiry-based story using images, maps, videos, field notes, and links to other websites. You can create teams and collaborate on storylines with peers.

1. Take pictures or share video of activities in your community focused on food security or food sovereignty. Draw upon the food systems elements you identified in Activity B. For example, you might include one or more of the following:
 - a. Farmers' markets
 - b. Farm-to-school efforts
 - c. Business or restaurants that produce foods locally
 - d. Places where you can find foods important to the different cultures in your community
2. Explain if or how your examples meet any of these criteria:
 - a. Increases access to food
 - b. Increases affordability
 - c. Provides nutritious and healthy food
 - d. Provides foods important to the communities' culture(s)
 - e. Is grown, raised, or gathered in ways that sustain the environment
 - f. Is grown, raised, or gathered with labor practices that do not exploit people

For example, a farmers' market may offer locally-sourced fruits and vegetables that are part of the region's history and culture. This meets criteria a, c, d, and e. (This might also meet other criteria.)

Follow the URL to WeExplore (<http://we-explore.com>). Post your story there and review and respond to your classmates' projects as well.

	3	2	1
Organization	<ul style="list-style-type: none"> • My elements support each other to clarify my points. • Elements are well-organized. • I synthesize multiple sources on the subject to demonstrate understanding food security. 	<ul style="list-style-type: none"> • My elements somewhat support each other • Elements are somewhat organized but relevant. • I synthesize at least one source on the subject of food security and demonstrate understanding 	<ul style="list-style-type: none"> • Elements are do not support each other. • Lacks organization. • I synthesize a least sources on the subject to demonstrate understanding food security.
Content and Evidence	<p>My examples clearly identify how they reflect criteria for food security and/or food sovereignty .</p> <p>I present causes and influences, and draw evidence from at least 3 sources. I can explain why my sources are credible.</p>	<p>My project addresses human behaviors or policies affecting the issue.</p> <p>I draw evidence from 1-2 sources. I can somewhat explain if the sources are credible.</p>	<p>My project does not address human behaviors or policies.</p> <p>I don't provide evidence.</p>
Style	<p>My demonstration provides new ideas, is engaging, and provides a smooth flow .</p>	<p>My delivery is not easy to understand/ follow but includes a conclusion and some transitions.</p>	<p>The project lacks a logical flow, transitions, and a conclusion.</p>

Sources:

http://www.inuitcircumpolar.com/uploads/3/0/5/4/30542564/icc_food_security_across_the_arctic_may_2012.pdf
<http://ccadapt.ca/sarafoodsecurity/>

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