

LESSON 4: WHAT IS THE FOOD SUPPLY CHAIN?

Understanding Goals

- A food supply chain or food system refers to the processes that describe how food from a farm ends up on our tables. The processes include production, processing, distribution, consumption and disposal.
 - The food we eat reaches us via food supply chains through which food moves systematically in domino-like motion from producers to consumers while the money consumers pay for food goes to people who work at various stages along the food supply chain in the reverse direction.
 - Every step of the supply chain requires human and/or natural resources.
 - Because a food supply chain is domino-like, when one part of the food supply chain is affected, the whole food supply chain is affected, which is often manifested through changes in price.
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Vocabulary: supply chain, production / producer, processing / processor, transport; retail / retailing, consumption / consumer, disposal, resources

Thematic Strands in Social Studies

- People, Places and Environment
 - Production, Distribution and Consumption
 - Global Connections
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Background

Students will be formally introduced to the concept of a food supply chain or food system. Specifically, they will learn about domino causality and two-way causality, and consider some of the “push” and “pull” factors involved in the movement of food and money through the supply chains through an in-class activity.

In the food supply chain, food moves from producer to consumer via the processes of production, processing, distribution, retailing and consumption; thus, food moves from farmer to consumer in a domino-like fashion. At the same time, money that consumers pay for food moves from consumers to producers in the reverse process, again in a domino-like fashion from consumer to retailer to distributor to processor to farmer. Thus, the two-sided causality that connects farmers and consumers is mediated by these two sets of domino causalities (see Figure 1).



Figure 1. Movements of food and money in a simple food supply chain

In addition, both movements of food and money are facilitated by “pulls” and “pushes.” In a food supply chain, producers and processors push or supply food *and* consumers pull or demand food thereby facilitating the dominoes (food) to fall (move) towards the consumers. Similarly, producers

and processors pull money and consumers push money to facilitate the movement of money from consumers to producers. Thus, if consumers' pull for food or push for money is weak or absent, the producers' push for food or pull for money would have to be strong in order to keep the food supply chain moving.

Advance Preparation

- Be prepared to show the interactive slide show of how chocolate is made, available from The Field Museum's website at http://www.fieldmuseum.org/chocolate/manufacture_interactive/manufacture.html.
 - For an explanation of domino causality and two-way causality, download from the Understandings of Consequence Project, © President and Fellows of Harvard College, available at http://www.pz.harvard.edu/ucp/curriculum/ecosystems/s1_res_dominosheet.pdf and http://www.pz.harvard.edu/ucp/curriculum/ecosystems/s5_res_twoway.pdf, respectively.
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Lesson Plan

Part 1 (15 min)

Introduce the concept of a supply chain. Then, show the interactive slide show of how chocolate is made, and have students name the processes "production," "processing," "distribution" and "consumption."

Part 2 (25-30 min)

Introduce the notion of domino causality. Ask students to come up with their own examples of domino causality. Then ask students what the connection is between domino causality and the food supply chain.

Then ask students to consider what would happen to the movement of chocolate along the supply chain if something happens along the supply chain (such as: one of the machines break down in the chocolate factory; the cacao trees produce fewer cacao pods than usual). [By asking students to consider the consequences of these events, they can begin to understand how all the processes are interconnected.]

Then introduce the concept of two-way causality. Ask students to come up with their own examples. Then ask students what the connection is between two-way causality and a food supply chain.

One way to improve students' understanding of the two-way causality and the push and pull in a food supply chain might be to have students act out the food supply chain. Students representing the consumers could pull on a table (which represents the food to be moved) while students representing the farmers and processors could push the table along; this would represent the process of consumers demanding or pulling for food and farmers/processors pushing food. As another scenario, students representing the consumers could just hold onto the table (neither pulling nor pushing) while students representing the farmers and processors could push the table. As a third scenario, students representing the consumers could push against the table while students representing the farmers and processors could push the table. This situation would represent the consumers resisting or boycotting a particular food product and the farmers/processors pushing

strongly but failing to push or sell their food. This activity could help build students' economic understandings of the food supply chain.

Homework / Reflection

1. Explain how the food supply chain works using the concepts of domino causality and two-way causality.
2. What do you think might happen when one of the “dominoes” (or steps in the supply chain) is taken out? What are the consequences for consumers and producers?