



March: K-2

Beyond MyPlate

CABAGGE



Farm to School Lessons

Compiled by:
Clemson University Education Coordinators

Lynn R. Adcox, BS
Karen Bunch Franklin, MS
Yenory Hernandez-Garbanzo, PhD

Lesson Support Staff:

Brittney Linton, BS
Ginger Loberger, BS

Advisory Committee:

Katherine Cason, PhD, RD, LD
Kattia Blanco, MS
Sarah Griffin, PhD
Patsy Smith, MEd
Kristen Welch, MS
Marlyne Walker, MS, RD



Overview

Welcome to the South Carolina Farm to School March Nutrition Education Lesson. This lesson contains information & hands on activities where K-2 students will be learning about the affect that our local Food Environment has on the food choices we make and ultimately the food we eat. Our goal for this lesson is to help children explore the connection between advertisements and availability to the Food Environment.

These lessons are designed to be delivered over a four week period, noting that introduction & activities will be supplemental to existing curriculum.

Estimated Total time: 60 minutes

Teacher Background

In developed countries like the United States, the food systems makes processed food products available in an ever- widening array of choices. More than 50,000 food items are available in U.S. Supermarkets, and about 9,000 new brand-name processed foods are introduced each year. In addition, many overly processed foods and sweetened beverages are available all around us – from vending machines to mini- markets at gas stations to corner stores.

Despite food seeming to be everywhere, access to health-promoting foods is more limited. Many people need transportation to reach a supermarket or a farmers' market where fresh, whole foods such as fruits and vegetables are typically available. Often places where students can pick up food on the way to school or after school have mostly overly processed food products and few wholesome foods.

The information that surrounds food is complex as well. Billions of dollars are spent on food advertising every year and much of this is for less-healthy foods. Additionally, the way the media presents food and nutrition information is sensationalized and confusing. It takes critical thinking skills to competently navigate the information environment.

Taken together, the food and information environments pus us towards processed food products sweetened beverages, and fast foods and pull us away from water, vegetables, fruits, and other whole foods. This lesson is about understanding our food environment and personally navigation through it.

.....

Lesson checklist



F2S Aim: Explore where our food comes from.

F2S Objectives

Students will be able to:

- * Explain the term "Food Environment" after learning about where our food comes from.
- * Understand that most of the food we eat comes from farms.
- * Discuss the Steps in the Food System.
- * Talk and discuss the different places our food goes when it leaves the farm.
- * Taste the Palmetto Pick of the Month (cabbage).



Materials:

- * Food Environment Cards (Appendix A - also in Dropbox)
- * The Story of Miguel's Tomatoes (Appendix B)
- * Discussion Questions for story (Appendix C)
- * Steps in the Food System (Appendix D)
- * Song Oats and Beans and Barley Grow (Appendix E)
- * Planting Guide (Appendix F)
- * Cabbage Powerpoint (Appendix G - also in Dropbox)
- * Taste activity materials (Cabbage-2 varieties, cutting board, knife, cups, chart)



National Health Education Standards

1.2.1	1.2.2	2.2.1	2.2.2	2.2.3
4.2.2	5.2.1	5.2.2	7.2.1	8.2.1

SC State Standards

ELA 1-2.4	Create responses to informational texts through a variety of methods. Use functional text features (including table of contents)
ELA 1-3.1	Use pictures, context, and letter-sound relationships to read unfamiliar words.
ELA 1-3.3	Use vocabulary acquired from a variety of sources.
ELA 1-6.1	Generate how and why questions about a topic of interest.
ELA 1-6.6	Follow one and two step oral directions.
SC 1.1.1	Compare, classify, and sequence objects by number, shape, texture, size, color, and motion, using standard English units of measurement where appropriate.
SC 2.1.3	Represent and communicate simple data and explanations through drawings, tables, pictographs, bar graphs, and oral and written language.
SC 2.1.4	Infer explanations regarding scientific observations and experiences.

Lesson Essential Components

Lessons profile	Page(s)	Yes	No	Notes
Palmetto Pick of the Month	8	★		Tasting activities with Cabbages
Health Education Standards	7-8	★		
SC-Cross Curricular Standards	7-8	★		
SC-F2S Behavioral Goals	7-8	★		
Cooking Activities			★	
Tasting Activities	8	★		PPM Activity
Physical Activity			★	
Food Safety	8	★		
School Food Garden	8	★		Garden Activity
Student to Farmer Connections (i.e. field trips, talks)	7-8	★		Food Environment Navigation
Student to Chef Connections			★	
Farm to Cafeteria			★	
Provision of scientific knowledge/rationale	7-8	★		
Risk and benefits about healthy behaviors	7-8	★		
Obstacles, Barriers & Solution	7-8	★		Food Environment Navigation
Family involvement and other supports		★		Family Activity Sheet
Set goals and monitoring progress			★	
Other hands on activities:	7-8	★		Cabbage Exploration Activity, Team Activities, Bulletin Boards

Let's Learn!

What is food environment?¹

Estimated Time: 10 minutes.

1. Ask students the question, "Where does food come from?" Allow students to share answers. Tell students that most of the food they buy in stores originally comes from farms. Where our food comes from is called a "Food Environment."
2. Explain the food environment is the actual food that is available to us (e.g., food we can get from grocery stores, vending machines, food stands/trucks, restaurants) and messages we get about food (e.g. advertisements we see on TV, billboards, and bus stops or a bumper sticker that says "support farmers, eat local").
3. Show the **Food Environment Cards** to students. (Appendix A) Ask if they have ever been to any of these environments. These cards show positive and negative examples of our current food environment.

Activity

Navigating the Food Environment¹

Estimated Time: 20 minutes

1. Tell the students **March** is the **National Nutrition Month** and also **March 8** is the **National Agriculture Day**.
2. Ask the children where do we get our food. (If they say a market or the grocery store ask them where do the markets and grocery stores get the food?) Tell them the food starts with the farmer. (Field trips to farms are a great way to bring the this lesson together by having students have questions ready to ask the farmer who grows some of their food.)
3. Ask if they know what the farmer does to get the food he sells to the grocery stores.
4. Tell the children you are going to read a story about a farmer and his tomatoes. Ask them to think about all of the things that might happen to the food before it is eaten. Read *The Story of Miguel's Tomatoes* (Appendix B) out loud to the children. The purpose of this story is to illustrate the five food-

system steps that Miguel's tomatoes undergo from the farm to people's homes.

- Begin by carefully reading over the first section of the story, *The Tomatoes Grow in the Fields*, because it describes how tomatoes are grown. After reading the first section, ask discussion questions (Appendix C) to engage students in learning.
5. Draw pictures from *The Story of Miguel's Tomatoes*, showing different scenes his tomato took from the farm to people's home. **Draw pictures of the steps below on a separate piece of paper: (Appendix D)**
 - Step 1: Getting ready to grow food
 - Step 2: Growing the food
 - Step 3: Moving the food from the field
 - Step 4: Processing the food
 - Step 5: Selling the food
 - Step 6: Storing the food
 - Step 7: Preparing and eating the food
 6. Complete the activity by thinking about types of Food Environments students can think of:
 - Farmer's Markets
 - Restaurants (McDonald's, Wendy's, Chick-Fil- A, etc)
 - Any roadside vegetable stands
 - Grocery Stores
 - Walmart, Bi Lo, Ingles, Publix, etc

Optional Activity

1. Sing the *Oats, Peas, Beans, and Barley Grow* (Appendix E) song with the class. Explain the song to the class and read over the lyrics first, making sure students understand the meanings of these words:
 - sows** his seed — plants his seed
 - takes his **ease** — takes his time
 - stands **erect** — stands up straight
 - hoes** the weeds — removes the weeds
 - harvests** his seed — cuts and collects his crops(Also explain to students what it means to repeat chorus after each verse)
2. When finished singing and doing motions, ask discussion questions based on this song to determine

what students know about farming. These may include:

- Where are foods like oats, peas, beans, and barley grown?
- What do farmers do first with their seeds?
- What do seeds need to grow?
- What kinds of things do farmers need to do to grow their crops?

★ Gardening Activity

Planting the Spring Garden

Estimated Time: 15-30 mins

Materials Needed:

Farm to School Planting Video

Note: This activity is designed to help the school plant for Spring in their Farm to School raised beds/in-ground gardens. Because schools are implementing lessons at different levels, please consult with the Farm to School Team at your school about the direction the school would like to take for planting the garden before doing this activity.

1. Review with the class the purpose of the school garden.
2. Explain the purpose of this activity is to plant the school garden. Take a few minutes to watch the **Farm to School Planting Video** (in Dropbox).
3. Next, make arrangements to spend time at the school garden to transplant seedlings or plant seeds.
4. When you return to the classroom, encourage students to journal about the experience. Continue to encourage students to journal throughout the planting/tending/harvesting process. Groups can journal about how each of these affect the garden: weather, sun, water/rain, etc.

★ Palmetto Pick Activity

Cabbage Sensory Exploration²

Estimated Time: 15 mins

Ingredients:

Green, red (or purple), savoy and Chinese cabbage varieties.

Two heads of each variety.

Small sample cups (four cups per group of four students)

White board and markers

Cutting board and knife

Cabbage Power Point Presentation (will be in Dropbox).

Sensory Exploration Activity:

1. Have students wash their hands (with soap & warm water for 20 seconds) & reinforce that it is important. Show the students that you have washed the cabbages before beginning.
2. Display the **Cabbage** power point (will be in Dropbox-Appendix G) to show the varieties of cabbages.
3. Chop and fill sample cups, keeping varieties separate; label cups and set aside.
4. Distribute sample cups to groups, one variety at a time.
5. Observe tastes, colors and textures, record observations on the board.
6. Vote on class favorite.

Note: You may want to have cabbage samples cut before you begin the PPM Activity. Remember, that you can use the Farm to School grant funds to purchase the materials required for this activity; or if you prefer not to purchase cabbage you may only use the power point that will be sent in Dropbox with this lesson. Additionally, if you need assistance identifying places to purchase SC cabbages, feel free to contact your Farm to School Agriculture regional coordinator.

Evaluation

Formal Assessment:

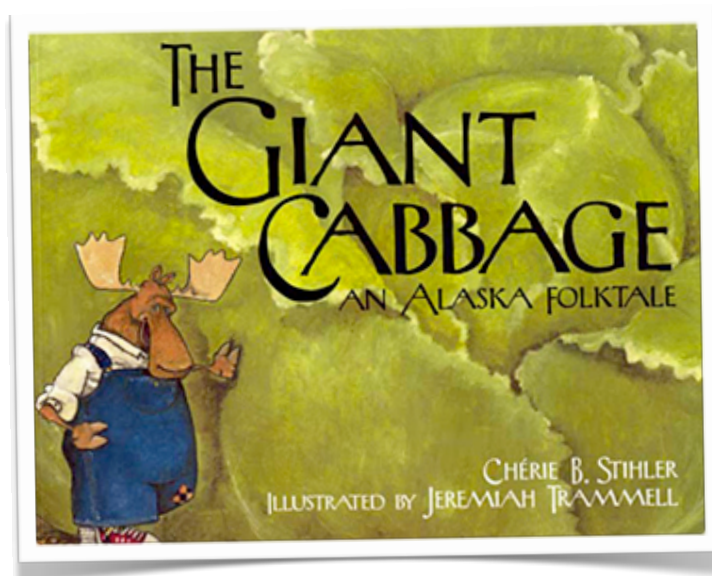
1. Review **Food Environments** and the importance of knowing where our food comes from.
2. Optional resource: Administer the Farm to School February
2. Lesson Assessment to your students (the electronic copy is in Dropbox). If you decide to use this assessment with your students, please contact us because we would like to summarize any information collected.

Informal Assessment: Observe participation in lesson activities. Complete survey at end of month (survey will be sent electronically).

¹ Activities adapted from Food Day Lessons (Lesson 4: Navigate the Environment & Lesson 5: Be An Advocate).

² Activity adapted from Cabbage Teaching Points, Grades K-2, March 201, Harvest of the Month, California Department of Public Health.

Resources



Books:

The Giant Cabbage: An Alaska Folktale by Cherie B. Stihler illustrated by Jeremiah Trammell

The Cabbage Soup Solution by Erika Oller

From Seed to Plant by Gail Gibbons

Never Eat Cabbage on Thursday by Nancey Libby Mills

The Story of Miguel's Tomatoes

<http://www.feedingminds.org/level1/lesson2/tomatostory.htm>

Websites:

Harvest of the Month-Cabbage Teaching Points: http://www.tcoe.org/NFAHC/HOTM/2011_03/TeachingPoints_K2.pdf

To request nutrition education materials visit the Clemson University Nutrition and Resource Center (NIRC): www.clemson.edu/nirc

Start a school salad bar-Part of First Lady Michelle Obama's Let's Move: <http://saladbars2schools.org/>

Appendix A
Food Environment Cards (pp.10-11)
(PPT will be in Dropbox)

Lesson 4: Navigate the Environment

Food Environment

— Cards —



Seeking out fresh, local produce from the farmers' market.



Seeking out a wide array of fresh produce from the supermarket.

Food Day Lessons

| 57

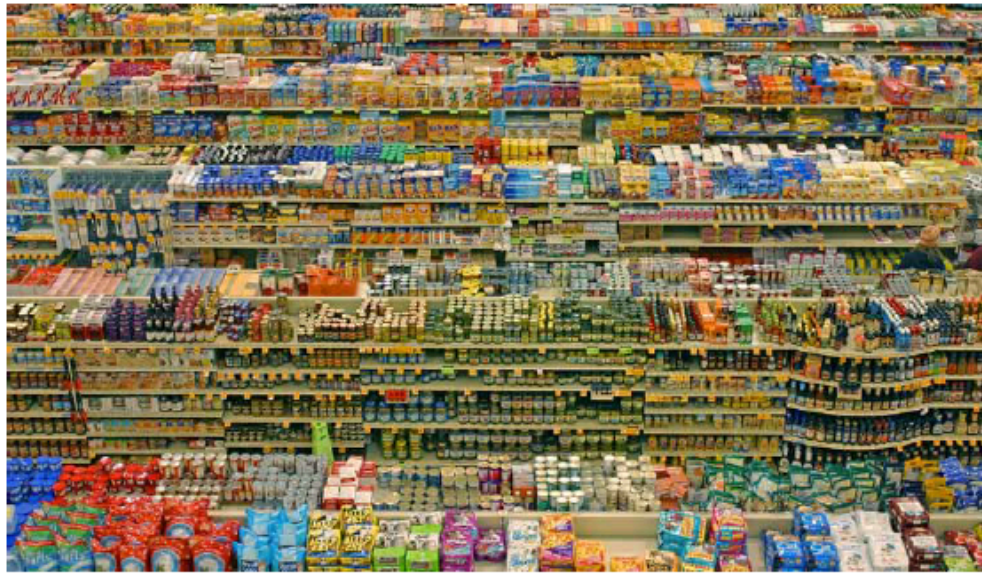
Lesson 4: Navigate the Environment

Food Environment

— Cards —



Avoiding the challenges of many fast food places in the environment.



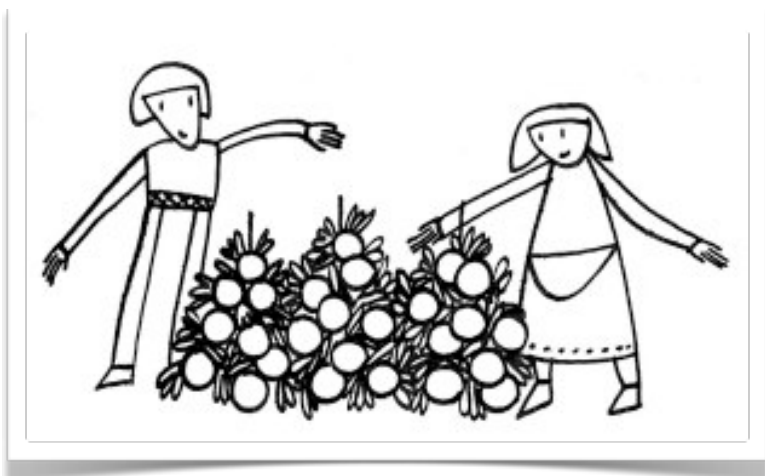
Avoiding the challenges of many overly processed foods in the environment.

The Story of Miguel's Tomatoes

The Tomatoes Grow in the Fields



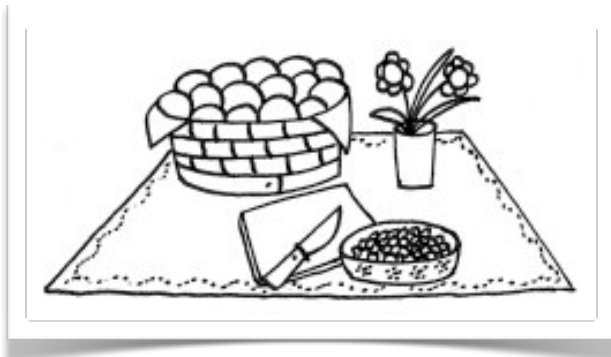
The sun was shining on the field beside a small wooden house. The earth was damp with rain and rich with manure from the animals. Miguel pushed his new plow slowly back and forth across the field, making long rows that looked like tiny mountains in the dark-brown soil. Satisfied that his little mountain rows were neat and straight, he gently planted small green tomato shoots that he had raised from seeds. Many days and nights went by. Rain came and went, and the plants grew tall and thick with leaves. Miguel walked up and down the rows, caring for the plants and adding more droppings from the animals to give nutrients to the soil.



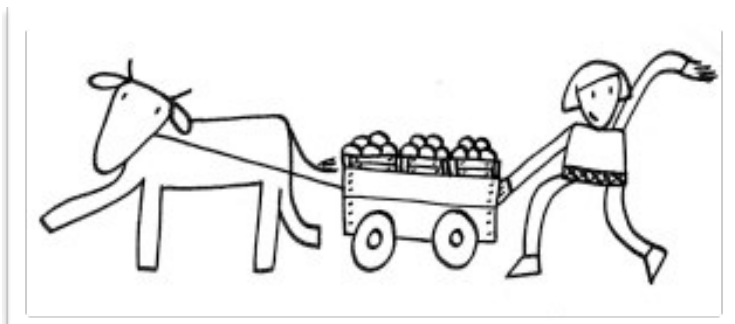
One day Miguel saw small yellow flowers peeking through the green leaves. Soon there were so many flowers that they looked like stars in the sky. And then, under each star-like flower, a tiny, round, green tomato appeared, as if by magic. The tomatoes grew and grew, and changed color as the days went by. One by one, each tomato turned from dark green, to yellow and then to orange-red. When a tomato became large and red, Miguel knew it would be soft and juicy and ready to eat. He went up and down the rows and picked the

tomatoes that were red and ready for his family to eat that day. Miguel brought a small bowl filled with tomatoes into his house. Ana, his wife, was happy to see how large and red the tomatoes were and knew they would taste sweet and good. She washed the tomatoes carefully to remove the dirt, and cut them into small pieces to make a sauce for their dinner that evening.

After many days, the field was colored with bright red tomatoes on the green plants as they stood in long, neat rows. Now many tomatoes were ready to be picked.



Ana could not use all of the ripe tomatoes for dinner that night. Early the next morning Miguel and Ana came into the field carrying large flat boxes. They slowly went up and down the rows of tomato plants, gently picking the tomatoes and packing them into the boxes. Miguel and Ana loaded the boxes of ripe tomatoes into their rickety cart. Saying goodbye to Ana, Miguel slowly pushed the cart down the dusty path to the village market.



The Tomatoes go to the Village Market

The market square was busy with people unloading goods to sell. Clothing and jewelry, belts and shoes, as well as cakes and breads made early that morning, were spread out for display on tables and blankets under brightly colored umbrellas. Eggs, meat and cheeses were being kept cool under wet cloths, and fruits and vegetables were carefully stacked into high piles. Some people, including Miguel, unloaded their boxes to one side of the market square. Here they waited for the people who came in trucks to buy foods and other items from the village and take them to the big cities.



Miguel stood by his boxes of tomatoes and watched as an old battered truck rumbled nosily into the little market square and sputtered to a stop. Pedro waved to the villagers in the market as he jumped out of the truck and slammed the door with a noisy bang. Pedro was happy to see many people in the market with boxes piled high with fresh, ripe fruits and vegetables. Pedro and Miguel talked about the price and quality of Miguel's tomatoes. When they agreed on a price Pedro agreed to buy all of Miguel's tomatoes. Miguel then helped Pedro load the boxes of tomatoes into the truck. Pedro visited other people in the market and bought many more fruits and vegetables.



Soon the back of the old truck was crowded with fresh fruits and vegetables raised in the village gardens. Pedro knew it was time to start the long journey back to the city. He was satisfied that he would make a profit on the resale of the foods he had just purchased in Miguel's village. Pedro climbed into his truck, carefully started the engine, and slowly pulled out of the market square, with a friendly wave to Miguel, who was pushing his cart back to his little house.

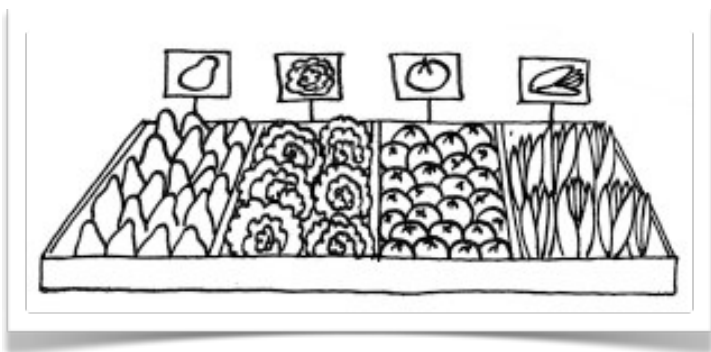
While Miguel was at the market, Ana picked more ripe tomatoes to be made into sauce. She carefully cleaned the jars with hot water and prepared the tomatoes for the sauce. When Miguel returned from the market, Ana had many beautiful red jars of tomato sauce to be eaten long after the summer sun was gone and their fields were covered with white snow. Ana was pleased that Miguel was able to sell all of their tomatoes.



She knew that they would now have money to purchase other foods and supplies they need for the family. After the long day, Miguel and Ana were tired and hungry and were glad to sit down to their evening meal of foods they raised in their garden, including sauce made from their bright red tomatoes.

The Tomatoes go to the Big City

While Miguel and Ana were having their dinner, Miguel's tomatoes continued their long journey to the big city. Carefully packed in their boxes, the fresh red tomatoes rumbled along dusty roads, over wooden bridges and through small townes. Many people in the city do not grow their own foods. They must buy everything they need from the great new downtown supermarket, or the market stalls that have been located along the city walls for as long as anyone can remember. For many years, Pedro has gone into villages in the countryside to buy vegetables to sell in the city. He sells his fresh vegetables to the produce manager at the new supermarket, to the people who have market stalls and to the food processing factories on the outside of the city walls.

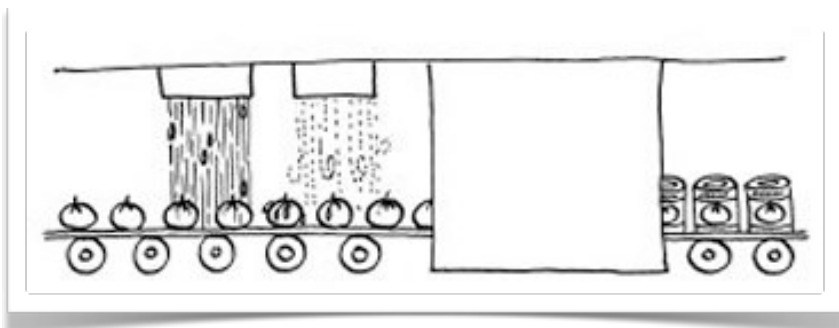


Pedro's truck came slowly to a stop at the loading dock of the new supermarket. The man from the supermarket was happy to see Miguel's fresh red tomatoes and the other vegetables in Pedro's big truck. Pedro unloaded several boxes of Miguel's tomatoes and other fresh vegetables and fruits and stacked them in a cool dark room filled with other boxes of tomatoes and vegetables. The heavy wooden door slammed shut and the room became dark and quiet. In the morning, workers from the supermarket would stack the tomatoes high in the shiny cool display cases under bright lights in the great supermarket. Busy city people would put the plump red tomatoes into plastic bags and carry them home for dinner.

The Tomatoes go to the Food Processing Factory

The rest of Miguel's tomatoes continued their journey through the crowded city streets. All around Pedro's truck, horns were honking and traffic was rushing as a police officer directed Pedro on to the highway leading to the factory district outside the centre of the city. Pedro's truck rolled up to the loading dock of the food processing factory just as the sun was going down behind the city.

At the factory, strong men carried the boxes of tomatoes from Pedro's truck into the warehouse, talking and laughing as they worked. Long rows of boxes filled with tomatoes and other vegetables were crowded against each other, waiting to enter the factory to be turned into canned food. Boxes of tomatoes were emptied onto the conveyor belt that chugged its way through the factory to each of the processing steps. Miguel's tomatoes were now mixed up with tomatoes from all parts of the countryside. The conveyor belt slowly carried the shiny red tomatoes past the sorters. The sorters examined the tomatoes as they flowed by, looking like a flowing red river of tomatoes.



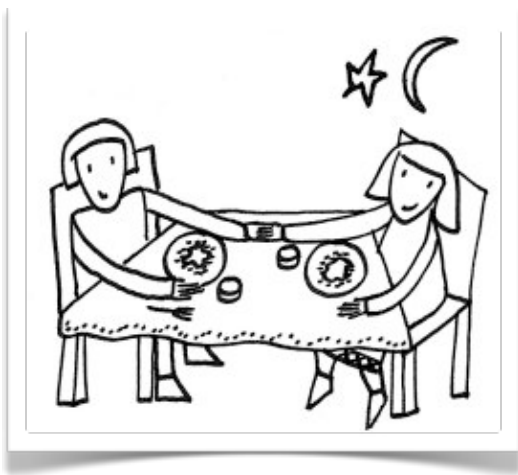
Their hands, wearing plastic gloves, could be seen darting out quickly to remove any tomatoes that were damaged. The tomatoes slowly chugged to the next station, where they were squirted with hot water and tumbled to remove their skins. Next they were dropped into a large tub where they were cooked and spices and salt were added. Miguel's tomatoes

were now bubbling in the large tub with all the other tomatoes, smooth and plump in the spicy red juice. They continued their journey to the canning area where they were dropped with a splash and a plop into rows and rows of shiny round cans. With a noisy bang, the cans were sealed. A bright red label with the picture of a tomato was glued on to each can. Workers quickly snatched up the cans and put them into strong brown cardboard boxes.

The Tomatoes go Home

Miguel's tomatoes, deep inside the round cans, packed into cardboard boxes, were piled on to an electric cart that took them to the big warehouse to be stored until they were sold. Miguel's tomatoes could spend many months waiting in the warehouse until they were ordered. They could be ordered by someone in the city, or they could travel around the world to a distant place, perhaps even a place where tomatoes have never grown. They could travel in a truck, a train, an aeroplane or a boat. They may be purchased and used for dinner at a hospital, a school, a restaurant or by a family.

It is even possible that one day Miguel and Ana will go to the grocery store in their small village and buy a can of cooked tomatoes when their own supply of sauce made by Ana is gone. They will sit down to dinner with the canned tomatoes in a sauce. And Miguel will say these tomatoes are delicious, Ana, but not as good as ours. And Ana will reply, yes, not as good as ours, but they are very, very good indeed. And they will not know that their tomatoes have come back home.



Appendix C

The Story of Miguel's Tomatoes by

Section 1: The Tomatoes Grow in the Fields

What did Miguel have to do to prepare his fields before planting? (Step 1)

What kinds of things do plants need to grow well? (Step 1)

How did Miguel know when to pick the tomatoes? (Step 2)

How did Miguel and his wife pick, store, and transport the tomatoes? (Step 3)

Section 2: The Tomatoes Go to the Village Market

- What did Miguel do with the tomatoes at the village market? (Step 4)

What did Pedro do with the tomatoes? How did he transport them? (Step 4)

Section 3: The Tomatoes Go to the Big City

- Where in the city did Pedro transport the boxes of tomatoes? (Step 5)

Why were the tomatoes stored in a cool, dark room at the supermarket? (Step 5)

Section 4: The Tomatoes Go to the Food Processing Factory

- What happened to the tomatoes at the food processing factory? (Step 6)

What was the job of the sorters at the factory? (Step 6)

Section 5: The Tomatoes Go Home

- What happened to the tomatoes after they were canned? (Step 7)

- Would Miguel and Ana ever buy canned tomatoes at a store? (Step 7)

What kinds of meals does your family make with canned tomatoes? (Step 7)

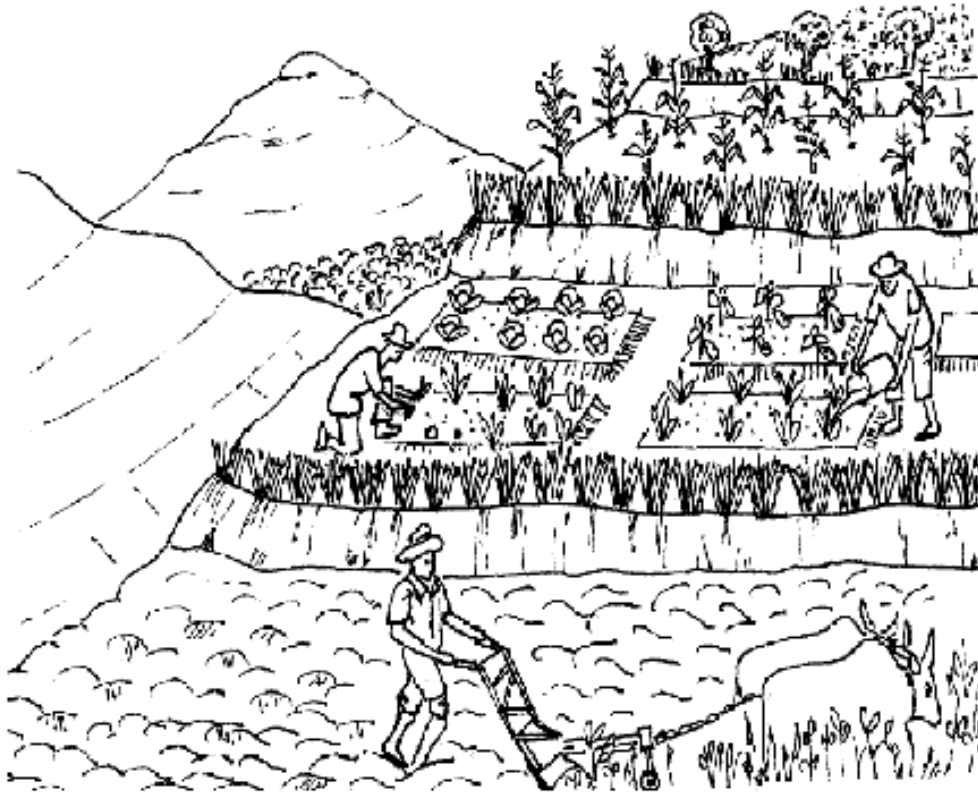
Peanuts into Peanut Butter — Optional Activity

As a way for students to step back a bit from what they have learned and better conceptualize the food-to-table process, encourage them to think about some common foods in their homes and discuss what kind of processing they went through to get there.

Students should make the connection, when possible, back to the crops. For example, have them consider the peanut butter and jelly sandwich. Have them consider and discuss the possible process that peanuts undergo to become peanut butter (or that berries take to become jelly). This kind of fun and practical pondering will help to reinforce what they have already learned, and allow them to make the crop connection with everyday foods that are real to them. Other simplified examples may include:

- Oatmeal — oats
- Tater Tots, French fries — potatoes
- Ice Cream — milk, sugar cane
- Hot Chocolate, coffee — cocoa beans
- * Pickles — cucumbers

Steps in the Food System



Steps in the Food System

1. Getting Ready to Grow Food
2. Growing the Food
3. Moving Food from the Field
4. Processing, Selling or Storing the Food
5. Preparing and Eating the Food

OATS, PEAS, BEANS, AND BARLEY GROW LYRICS

Chorus:

Oats, peas, beans, and barley grow
Oats, peas, beans, and barley grow
Do you, or I, or anyone know
How oats, peas, beans, and barley grow?

First the farmer plants the seed
Stands up tall and takes his ease
Stamps his feet and claps his hands
And turns around to view the land
(Repeat Chorus)

Then the farmer waters the ground
Watches the sun shine all around
Stamps his feet and claps his hands
And turns around to view the land
(Repeat Chorus)

After weeks of sun and air
The farmer picks the crops right there
Stamps his feet and claps his hands
And turns around to view the land
(Repeat Chorus)

'Oats peas beans and Barley Grow' is an old traditional British folk song with obvious connection to the farming community; believed to date as far back as the year 1380.

Appendix F

Important Spring Gardening Recommendations

General Gardening Questions

<http://www.clemson.edu/extension/hgic/plants/vegetables/gardening/>

Important Gardening Dates Suggestions

<http://www.clemson.edu/extension/hgic/plants/vegetables/gardening/hgic1256.html>

Plants	Harvest Days	Dates to plant
Radish	25-30	1/1-3/1 *
Onion greens sets/plants	35-45	2/1-3/1
Mustards	40-60	1/1-2/25 *
Lettuce head	30-50	12/20-2/5
Lettuce leaf	40-70	12/20-2/5 *
Collards	60-70	2/20-3/15 *
Carrots	60-80	12/15-1/30
Cabbage	60-80	12/1-1/15
Broccoli	60-70	2/15-3/1 *
Beets	50-60	12/15-1/30 *
Beans snap-garden	50-70	1/10-1/20
Beans edible soy	60-70	3/15-3/30
Turnips	60-70	1/1-3/1 *
Spinach	50-60	1/1-2/25 *
Irish potatoes (next year)	90-110	4/15-7/1
Sweet potatoes (next year)	120	2/1-2/15
Peppers(large transplants)	60-70	3/15-4/10 **
Tomatoes(large transplants)	70-80	3/25-4/10 **

Keep in mind there are approximately 150 days from 1/1/2012 - 5/31/2012

If you would like your students to harvest a few of their crops before the end of school they need to start planting before Mid February.

* Farm to School's favorite top 8 for quick and easy results!

** Start from seed in January, plant transplants mid March or after the last frost, to harvest by May 30, 2012(hopefully).

Feel free to contact your local extension employees for help with the garden or your Regional Farm to School Coordinator.

Appendix G
Cabbage Power Point Presentation
(PPT will be in Dropbox)

