



# March: 3-5

## Beyond MyPlate

### CABAGGE



# Farm to School Lessons

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## Overview

Welcome to the South Carolina Farm to School March Nutrition Education Lesson. March is a special month for SC Farm to School Program because we will be celebrating the National Agriculture Day (March 8th) and the National Nutrition Month. Particularly, March lessons contains information & hands on activities where 3-5 students will be learning about the effect 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 students explore the connection between advertisements and availability to the Food Environment. Students will remember from previous Farm to Schools lessons that healthy food choices should be whole, mostly plants rather than overly processed foods. To increase students' interest on eating SC fruits and vegetables, this lesson also includes a tasting activity that allows students to explore and taste several varieties of cabbages, the Palmetto Pick of the Month.

**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.

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Source: Food Day Lessons (Lesson 4: Navigate the Environment).

# Lesson checklist



**F2S Aim:** Explore the food environment to eat “Whole-Real Foods”, “Mostly SC Food Plants” and “Not too Much”.

**F2S Objectives**

*Students will be able to:*

- \* Explain the term “Food Environment”.
- \* Identify factors that affect the “Food Environment” (Advertisements and Availability)
- \* Discuss the types of places that play a role in developing the Food Environment (Farmer’s Markets, Fast Food Chains, Local Vegetable stand and School Cafeterias).
- \* Taste the Palmetto Pick of the Month (cabbage).



**Materials:**

- \* Food Environment Cards (Appendix A)
- \* Navigate the Food Environment Materials: white paper and variety of writing tools.
- \* Gardening journal
- \* Farm to School Planting Video (In Dropbox)
- \* Transplanting Young Plants (Appendix B - also in Dropbox)
- \* Important Recommendations for your Spring Garden (Appendix C)
- \* Cabbage Powerpoint (Appendix D - also in Dropbox)
- \* Tasting Activity Materials: variety of cabbages (two heads of each sample), sample cups, cutting board, knife, markers



## National Health Education Standards

1.5.1	1.5.3	1.5.4	2.5.4	2.5.5
3.5.1	3.5.2	4.5.1	5.5.3	5.5.5
5.5.6	7.5.1	7.5.2	7.5.3	8.5.1
8.5.2				

## SC State Standards

ELA 4.2.1	Summarize evidence that supports the <b>central idea</b> of a given informational <b>text</b> .
ELA 4.2.3	Analyze informational <b>texts</b> to locate and identify facts and opinions
ELA 4.2.4	Create responses to informational <b>texts</b> through a variety of methods (for example, drawings, written works, and oral presentations).
ELA 4.5.1	Create informational pieces (for example, postcards, flyers, letters, and e-mails) that use language appropriate for the specific audience.
ELA 4.6.2	Use print sources (for example, books, magazines, charts, graphs, diagrams, dictionaries, encyclopedias, atlases, thesauri, newspapers, and almanacs) and <b>nonprint sources</b> to access information.
ELA 4.6.3	Organize information by classifying or sequencing.
ELA 4.6.7	Use vocabulary (including Standard American English) that is appropriate for the particular audience or purpose
ELA 4.6.8	Select appropriate graphics, in print or electronic form, to support written works and oral and visual presentations.
ELA 4.6.6	Use the Internet as a source of information.

## Lesson Essential Components

Lessons profile	Page(s)	Yes	No	Notes
Palmetto Pick of the Month	8	★		Tasting Activities with Cabbages
Health Education Standards	4	★		
SC-Cross Curricular Standards	5	★		
SC-F2S Behavioral Goals	7-9	★		
Cooking Activities			★	
Tasting Activities	8	★		PPM Activity
Physical Activity			★	
Food Safety	8	★		
School Food Garden	8	★		
Student to Farmer Connections (i.e. field trips, talks)	7	★		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 Letter
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?<sup>1</sup>

Estimated Time: 5 minutes.

1. Write "Food Environment" in the middle of a sheet of chart paper (or in the board/ smart board).
2. Have a discussion and ask students to share ideas about what they think food environment means. Accept all answers.
3. Explain the food environment is the actual food 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").
4. Use the **Food Environment cards or the Food Environment Power Point Presentation** (See Appendix A or use the PPT at Dropbox) to show positive and negative examples of our current food environment.

## Activity

### Navigating the Food Environment <sup>1</sup>

Estimated Time: 20 minutes

1. Tell the students **March** is the **National Nutrition Month** and also **March 8** is the **National Agriculture Day**.
2. Tell them that in order to celebrate these events they will do a Farm to Community Navigation Project.
3. Challenge your students to navigate the food environment of their community.
4. Give students blank sheets of white paper, and a variety of writing tools (pens, markers, pencils, and crayons).
5. Have the students delve into their memory banks and draw a map of the area around their home and surrounding area and label the places that affect their food environment.
6. Make sure they include the following:
  - Grocery stores
  - Farmer's Markets

- Restaurants (McDonald's, Wendy's, Chick-Fil-A, etc)
- Any roadside vegetable stands
- Walmart, Bi Lo, Ingles, Publix, etc
- Gas stations

7. Explain to the students they should put down all the places they can think of so that they can have a better idea of what type of Food Environment they live in and around (Positive versus Negative Food Environments).
8. After they have completed their Food Environments, instruct them to mark all venues that offer fresh fruits and vegetables and restaurants that serve simple, basic wholesome meals, and gardens that are growing food (Positive Food Environments). If you offer plant-based snacks and other whole foods in your classroom, mark your classroom. Also, school meals offer fruits at breakfast and fruits and vegetables at lunch.
9. Explain that seeking out positive opportunities is navigating through the food environment and not letting the challenges of the food environment get the best of us.
10. Share the students' Farm to Community Navigation projects in one of your school's bulletin boards as a way to celebrate the National Nutrition Month and the Agricultural Day.
11. Also consider including information on the bulletin board that would create promotions for whole foods, especially SC fruits and vegetables, or other materials that educate others about the benefits of SC fruits and vegetables, and the consequences of eating too much processed foods.

*Note:* Remember, that you can use the Farm to School grant funds to purchase the materials required for this activity. If you need assistance with this activity don't hesitate to contact your Farm to School Educational Coordinator.

## ☆ 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.

**Optional:** Review Appendix C (**Transplanting Young Plants**) and Appendix D (**Important Spring Gardening Recommendations**), which include important/additional recommendations to start with your spring school garden.

## ☆ Palmetto Pick Activity

### Cabbage Sensory Exploration<sup>2</sup>

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 (it will be in Dropbox & Appendix C).

For adding cabbage teaching points: [http://www.tcoe.org/NFAHC/HOTM/2011\\_03/TeachingPoints\\_K2.pdf](http://www.tcoe.org/NFAHC/HOTM/2011_03/TeachingPoints_K2.pdf)

#### 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 C) to show the varieties of cabbages.
3. Chop and fill sample cups, keeping varieties separate; label cups and set aside.
4. Divide students into groups of four.
5. Distribute sample cups to groups, one variety at a time.
6. Observe tastes, colors and textures, record observations on the board.
7. 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 the Navigating Food Environment Project & discuss the differences of positive and negative food environments.

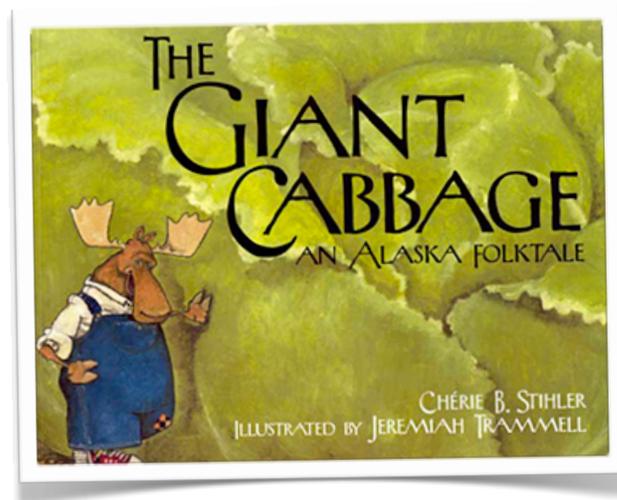
**Informal Assessment:** Observe participation in lesson activities. Complete survey at end of month (survey will be sent electronically).

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

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

# Resources



## **Books:**

Koch P.A., Barton A.C., Contento I.R. (2008). Farm to Table & Beyond. Teachers Columbia University & the National Gardening Association, New York, NY.

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

## **Websites:**

Harvest of the Month-Cabbage Teaching Points: [http://www.tcoe.org/NFAHC/HOTM/2011\\_03/TeachingPoints\\_K2.pdf](http://www.tcoe.org/NFAHC/HOTM/2011_03/TeachingPoints_K2.pdf)

Garden Organic website includes downloadable activities and games for school gardening: <http://www.gardenorganic.org.uk/growyourown/activities.php>

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

**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.

Appendix B  
Transplanting Young Plants  
(PDF will be in Dropbox)



## A22 Transplanting young plants



You should have vigorous young plants after thinning and potting on seedlings (A20 and 21). Transplanting is the final step to enable plants to grow on to maturity. The aim is to give them enough space to produce a good crop. This activity has instructions for transplanting into the soil and containers (with more details about containers in A11).

### Resources

- Young plants in seedbed or pots/trays
- Hand fork or trowel
- Prepared planting space or container
- Sheltered location for hardening off, ideally with cloche, horticultural fleece and/or cold frame

### Activity

- 1 Follow instructions on the next page for 'hardening off' young plants, to avoid 'transplant shock' by acclimating plants to the new growing environment.
- 2 Follow instructions on the next page for transplanting young plants
  - a From a seedbed into the soil
  - b From pots into the soil
  - c From pots into containers



### b Transplanting from pots into the soil

- 1 Prepare bare soil that has already been dug and organic matter added (if required for your plants). See A9.



- 2 Water plants thoroughly and remove from pots as you plant.



Turn pots over and support the stem with a finger on either side, gently squeezing the sides and bottom of the pot to loosen the root ball so it falls out whole.

For plants in modular trays, push from beneath to loosen the root ball and gently lift out the plant.

- 3 Using a hand fork or trowel, dig a hole big enough for the root ball. Place the root ball in the hole, backfilling and gently firming the soil so there are no air pockets.



- 4 Plant vegetables so their lowest leaves are just above the soil. Plant others so they are at the same height as in the pot.



- 5 Continuing planting, leaving recommended final space between plants (see seed packet and Food Growing Instruction Cards). Use a hand fork to loosen the soil surface around plants if compacted. Water well.

### Instructions for transplanting young plants

#### Hardening off before transplanting

- 1 Place young plants outdoors to a sheltered, light location during the day and move back indoors at night/after school. Repeat for two weeks, gradually leaving plants outside at night as well, covered with horticultural fleece. Do not leave plants that are damaged by frost outdoors when frost is forecast (eg. conifer and evergreens; see Food Growing Instruction Cards).



- 2 Alternatively, move plants to
  - A cold frame, a low glazed box-like structure with lid
  - A cloche, a portable tunnel structure made of polythene stretched over wire hoop frame

Lift up the lids or sides during the day and close at night, increasing the exposure to outdoor weather, eventually leaving cold frames open all the time and removing cloches.



#### Top tip Watching for damage

Keep a close eye on your plants for any signs that the change in growing conditions is too sudden and causing damage, such as yellowing leaves, browning of leaf margins/growing tips or slow (if any) growth.



### a Transplanting young plants from a seedbed into the soil

- 1 Water plants and then gently dig up plants using a hand fork or trowel. Lift with as much root and moist soil as possible.



- 2 Plant without delay in prepared soil, following steps 3-8 on the next page.

### c Transplanting young plants from pots into containers

- 1 Water plants thoroughly and leave them to drain.



- 2 Fill the new pot with organic peat-free potting compost until you reach the same depth as the bottom of the pot you're transplanting.



- 3 To remove plants, turn pots over and support the stem with a finger on either side, gently squeezing the sides and bottom of the pot to loosen the root ball so it falls out whole. For plants in modular trays, push from beneath to loosen the root ball.



- 4 Place the plant in the hole, backfilling and gently firming the compost so there are no air pockets.



The final height of the compost should allow for 2cm gap at the top of the pot for watering. Water well.

Appendix C

## 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>

<u>Plants</u>	<u>Harvest Days</u>	<u>Dates to plant</u>
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 D  
Cabbage Power Point Presentation  
(PPT will be in Dropbox)

PALMETTO PICK OF THE MONTH



CABBAGE (MARCH)

Adapted from [www.farmtofood.com](http://www.farmtofood.com)

1

Cabbage Varieties

- Green cabbage
- Red/Purple cabbage
- Savoy cabbage
- Chinese cabbage

2

Green Cabbage



3

Red/Purple Cabbage



4

Savoy Cabbage



5

Chinese Cabbage



6