
VEGETABLE



TOOLKIT

Florida Department of
Agriculture and Consumer
Services

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FOOD, NUTRITION & WELLNESS DIVISION

ABOUT US

The Division of Food, Nutrition and Wellness conducts, supervises and administers child nutrition and commodity food distribution programs that are carried out using state or federal funds. We provide outreach, guidance, and training to child nutrition program sponsors, schools, school food service directors, parent and teacher organizations, and students about the benefit of fresh food produced in Florida.

MISSION

Our mission is to ensure that every child in Florida has access to a healthy, nutritious meal each day; increase awareness and consumption of Florida's agricultural commodities; reduce food insecurity among Florida's most vulnerable populations; and encourage healthy lifestyles among Florida residents.



InfoFNW@FDACS.gov



1-800-504-6609

NONDISCRIMINATION STATEMENT



In accordance with federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, disability, age, or reprisal or retaliation for prior civil rights activity. Program information may be made available in languages other than English. Persons with disabilities who require alternative means of communication to obtain program information (e.g., Braille, large print, audiotope, American Sign Language), should contact the responsible state or local agency that administers the program or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339.

To file a program discrimination complaint, a Complainant should complete a Form AD-3027, USDA Program Discrimination Complaint Form which can be obtained online at: <https://www.usda.gov/sites/default/files/documents/ad-3027.pdf> [], from any USDA office, by calling (866) 632-9992, or by writing a letter addressed to USDA. The letter must contain the complainant's name, address, telephone number, and a written description of the alleged discriminatory action in sufficient detail to inform the Assistant Secretary for Civil Rights (ASCR) about the nature and date of an alleged civil rights violation. The completed AD-3027 form or letter must be submitted to USDA by:

mail:

U.S. Department of Agriculture
Office of the Assistant Secretary for Civil Rights
1400 Independence Avenue, SW
Washington, D.C. 20250-9410; or

fax:

(833) 256-1665 or (202) 690-7442; or

email:

Program.Intake@usda.gov

HANDLING OF PRODUCE

When faced with the challenge of increasing vegetable acceptance among students, school nutrition programs have a variety of tools and strategies at hand. These include correct handling of vegetables, applying appropriate cooking techniques, enhancing flavor through seasoning blends, strategic use of language, and engaging kitchen staff, students, and other members of the school community to change the culture around school meals.

STORAGE

Fruits		
Store in Fridge		Store at Room Temperature
Apricots	Cherries	Apples
Asian Pears	Cut Fruit	Bananas
Berries	Figs	Melons
	Grapes	Papayas
		Plantain
		Pomegranates
		Persimmons
		Pineapple
Vegetables		
Store in Fridge		Store at Room Temperature
Artichokes	Brussel Sprouts	Basil (in water)
Asparagus	Cabbage	Cucumber
Green Beans	Carrots	Eggplant
Beets	Cauliflower	Garlic
Belgian Endive	Celery	Ginger
Broccoli	Cut Vegetables	Jicama
	Green Onions	Onions
	Herbs	Peppers
	Leafy Vegetables	Potatoes
	Leeks	Pumpkins
	Lettuce	Sweet Potatoes
	Mushrooms	
	Peas	

CLEANING

- Washing too far in advance removes some of nature's natural preservatives. However, head lettuce or leafy greens remain crisper when washed right away and then refrigerated. Packaged fruits and vegetables labeled "ready-to-eat," "washed," or "triple washed" need not be washed again. By rewashing, you risk adding more pathogens.
- Refrigerate all cut, peeled, or cooked fruits and vegetables within 2 hours.
- Never use detergent or bleach to wash produce. Instead, rinse produce under running tap water immediately prior to use, including those with skins and rinds that are not eaten. A produce brush should be used to remove dirt from produce with thick outer skin like melons, potatoes, and winter squash.
- Always keep produce separate from raw meat, poultry, and seafood.



ROASTING VEGETABLES

NEED AN EASY WAY TO EAT MORE VEGETABLES?

Roasted vegetables are here to save the day! Roasted veggies are lightly crisp on the outside and tender and caramelized on the inside. The oven brings out the natural sweetness, which makes them appealing to picky eaters. Oven roasting transforms vegetables so they taste less raw, and more like tasty, crispy, tender bites!

TIPS FOR ROASTING

- Use a high temperature. The best temperature for roasting vegetables is 400F
- Don't overcrowd the pan. Place vegetables in a single layer without overlapping one another, allowing the air to circulate and crisp the outsides.
- Use oil of your choice. Oil is necessary for vegetables to caramelize.
- Don't skimp on seasonings!

ROASTED VEGGIES RECIPE

Ingredients:

- Vegetables of your choice (sweet potato, zucchini, onion, broccoli)
 - Salt, to taste
 - Pepper, to taste
- Onion powder, to taste
- Garlic powder, to taste
- Oil of your choice

Directions:

1. Chop vegetables and place in bowl
2. Add oil and seasonings
3. Toss to coat
4. Transfer to baking sheet
5. Roast at 400F for 25-35 minutes or until vegetables are tender, tossing and rotating halfway

COOKING TIPS

Mishandling of vegetables by cooking too much or too little has a noticeable effect on the product's appearance and taste. The Institute of Child Nutrition developed an easy-to-use timetable to ensure vegetables are cooked properly for maximum flavor and visual appeal.

Vegetable Steamer Chart

Timetable for Cooking or Steaming Fresh or Frozen Vegetables For 100 Servings, ¼ Cup Each						
Vegetables Fresh or (As Purchased)	Amount to Purchase Frozen	Ready to Cook (Pounds)	Amount of Water (Pounds)	BOILING		STEAMING (Minutes)
				Cooking Time After Water Boils (Quarts)	Time at 5 Pounds Pressure (Minutes)	
Asparagus: spears cuts and tips Frozen	Fresh 12.3	20.7 12.3	11.0 1 ¼	3 ¼ 7 to 10	10 to 25 5 to 10	7 to 10
Beans or peas, blackeye	Fresh Frozen	19 8.9	9.7 8.9	2 ½ 1 ¾	30 to 45 15 to 30	20 to 40 20 to 30
Beans, green, cut	Fresh Frozen	9 8.7	7.9 8.7	1 ¾ 1	15 to 30 10 to 20	20 to 30 10 to 15
Beans, lime: Baby Fordhook	Fresh Frozen Frozen	21.1 9.2 9.0	9.3 9.2 9.0	2 ½ 1 ½ 1 ½	15 to 25 12 to 15 6 to 12	15 to 20 10 to 15 12 to 20
Beet greens	Fresh	28.7	13.7	water on leaves	15 to 25	15 to 25
Beets, whole for slicing	Fresh	13.0	9.5	to cover	45 to 60	60 to 75
Broccoli: spears cut or chopped	Fresh Frozen Frozen	10.6 10.4 10.4	8.6 10.4 10.4	2 ¼ 1 ½ 1 ½	10 to 25 10 to 15 6 to 20	7 to 10 5 to 10 10 to 20
Carrots: whole (for slicing) cuts and tips	Fresh Frozen	11.9 9.5	8.3 9.5	2 ½ 1	20 to 30 8 to 10	15 to 30 3 to 5
Cauliflower, flowerets	Fresh Frozen	11.3 10.9	7.0 10.9	4 ½ 1 ½	15 to 20 10 to 12	8 to 12 4 to 5
Celery, 1" pieces	Fresh	12.4	10.6	3 ½	15 to 20	10 to 15
Chard	Fresh	15.8	14.5	water on leaves	15 to 25	15 to 25
Corn: on cob (½ medium ear) whole kernel	Fresh Frozen	27 9.1	17.6 9.1	6 or to cover 1 ½	5 to 15 5 to 10	8 to 10 5 to 10
Eggplant, pieces or slices	Fresh	14.8	12.0	3 ½	15 to 20	10 to 15
Kale	Fresh Frozen	8.5 10.6	5.7 10.6	2 1 ¾	25 to 45 20 to 30	15 to 35 15 to 30
Mustard greens chopped	Fresh Frozen	7.6 8.6	7.1 8.6	water on leaves 1 ¾	15 to 25 20 to 30	15 to 25 15 to 20
Okra, whole	Fresh Frozen	10.3 8.5	9.0 8.5	2 1 ¼	10 to 15 3 to 5	8 to 15 3 to 5
Onions: Mature, quartered if large	Fresh	14.1	12.4	7	20 to 35	20 to 35

Continued

COOKING TIPS

Timetable for Cooking or Steaming Fresh or Frozen Vegetables For 100 Servings, ¼ Cup Each						
Vegetables Fresh or (As Purchased)	Amount to Purchase Frozen	Ready to Cook (Pounds)	Amount of Water (Pounds)	BOILING		STEAMING (Minutes)
				Cooking Time After Water Boils (Quarts)	Time at 5 Pounds Pressure (Minutes)	
Parsnips, 3" pieces	Fresh	12.3	10.2	4 ¾	20 to 30	15 to 20
Peas and carrots	Frozen	9.2	9.2	1	8 to 10	3 to 5
Peas, green shelled	Fresh	24.7	9.4	2	10 to 20	10 to 20
	Frozen	9.9	9.9	1	5 to 10	3 to 5
Potatoes, whole	Fresh	11.3	9.2	5	30 to 45	30 to 45
Rutabagas, 1" cube	Fresh	12	10.2	2 ½	20 to 30	15 to 30
Soybeans, green	Fresh	14.5	9.4	1 ¾	10 to 20	
Spinach, leaf	Fresh	13.1	11.5	water on leaves	10 to 25	4 to 5
	Frozen	15.3	15.3	1 ¼	5 to 10	5 to 10
Squash, winter: Butternut, pieces mashed	Fresh	13.3	11.2	5 ¼	15 to 30	15 to 20
	Frozen	14.3	14.3			20 to 25
Succotash	Frozen	10.6	10.6	2	6 to 15	12 to 20
Sweet potatoes, whole	Fresh	11.0	8.6	5	30 to 45	20 to 40
Turnip green Chopped	Fresh	15.4	10.8	water on leaves	15 to 25	15 to 25
	Frozen	10.5	10.5	1 ¾	20 to 30	15 to 20
Vegetables, mixed	Frozen	12.3	12.3	1	12 to 20	12 to 20

NOTE: Cooking times for fresh vegetables are approximate; they can differ with variety, maturity, quality, and size of vegetables





VEGGIE DIPPER RECIPES

Mixing together an easy, nutritious dip recipe can be a great snack! Serve with favorite vegetables, tortilla or pita chips, fruit, or pretzels. The options are endless for these low-fat, high-protein dips!

CHOCOLATE HUMMUS

- 15 oz can of chickpeas, drained
- 2 tsp chickpea water (aquafaba)
- ½ cup cocoa powder
- ¼ cup maple syrup
- ½ cup peanut butter
- 1 tsp vanilla extract
- ½ tsp salt

HOW TO MAKE:

Open up a can of chickpeas. Remove 2 tbsp of chickpea water before draining. Add all drained chickpeas, chickpea water, and the rest of the ingredients to a food processor. Blend until smooth.

20 portions of 1 tbsp serving size

FRENCH ONION DIP

- 1 cup low-fat Greek yogurt
- ¼ cup whipped cream cheese
- 3 tbsp dried onion flakes
- ½ tsp garlic powder
- ½ tsp Worcestershire sauce
- ½ tsp salt

TZATZIKI

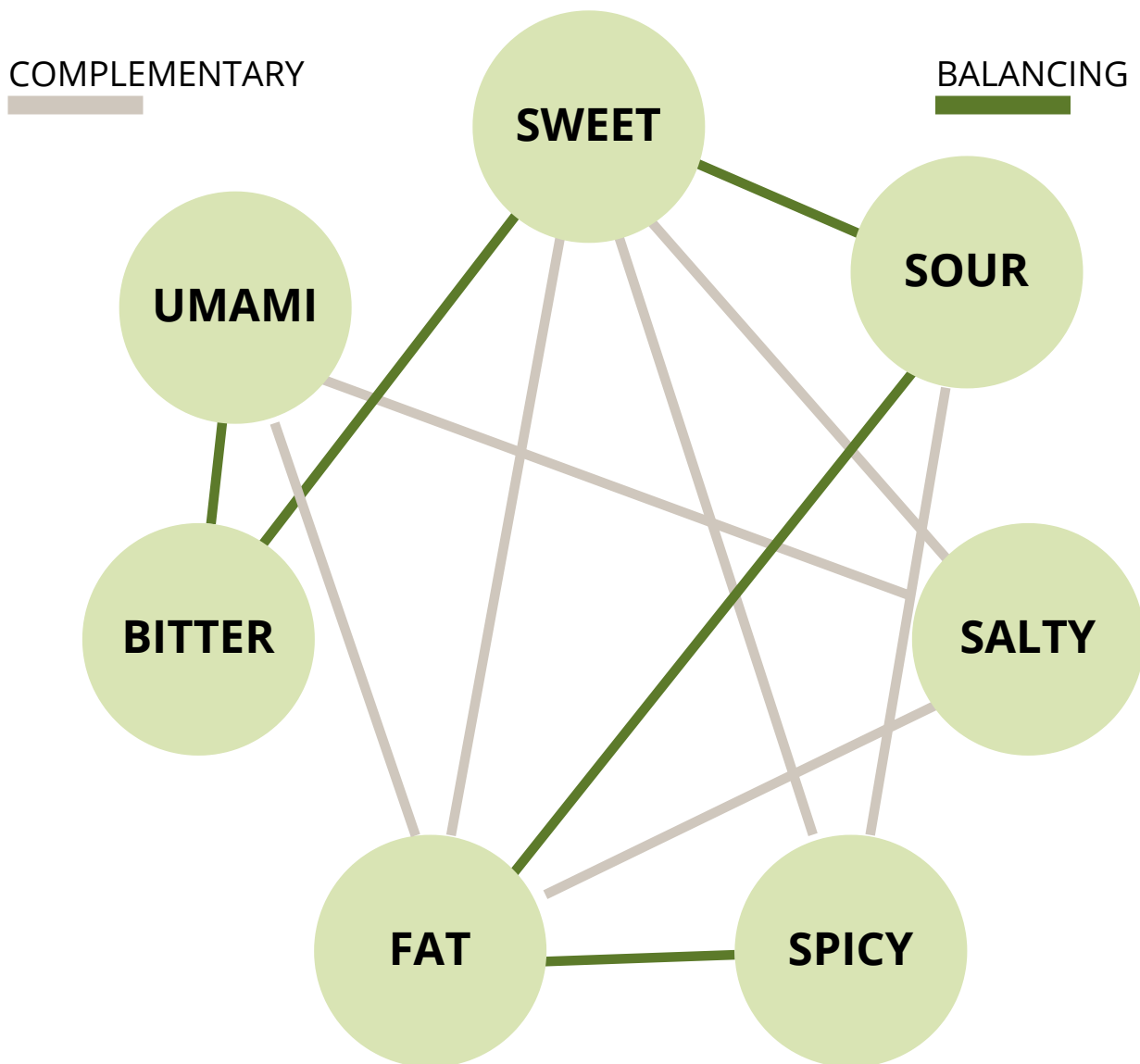
- 1 ¼ cup low-fat Greek yogurt
- 2 tsp fresh dill
- 1 lemon, juiced
- 2 garlic cloves, minced
- ½ cup cucumber, grated
- 2 tsp olive oil
- ¼ tsp salt
- dash of pepper

CHOCOLATE CHIP COOKIE DIP

- 1 cup low-fat Greek yogurt
- 2 tbsp honey
- ½ cup chocolate chips
- ¼ cup peanut butter
- 1 tsp vanilla extract

FLAVOR COMBINATIONS

There are two kinds of taste pairings that work well together: complementary tastes and balancing tastes. Complementary tastes are the kind that accentuate one another; salty and sweet are the best example. Balancing tastes oppose one another to help create harmony; fat mellows out spiciness, and sourness plays down sweetness. This diagram maps out all the different complementary and balancing tastes.





SEASONING CHART

The use of flavor or seasoning “stations” is a growing trend in school food service. Consisting of an area or cart where students can add low or no-sodium seasonings, spices, or sauces to boost flavor, flavoring stations allow students to feel more empowered by having control to season their own meals. The 2017 School Nutrition Trend Report found that 46% of 515 districts surveyed offered some kind of “self-service options that allow students to add seasoning, spices or sauces to their meals”. The 2016 SMART study explored salad bar effect on participation, noting that over 60% of directors who increased the use of salad bars said that kids ate more produce as a result.

Spice Mixture Chart											50 ¼ cup Portions			
Mixture	Salt	Pepper	Garlic Powder	Onion Powder	Ginger Powder	Curry Powder	Chili Powder	Cumin	Dry Mustard	Paprika	Oregano	Tarragon	Basil	Parsley
American	1 tsp	1 tsp	2 tsp	2 tsp										1 Tbsp
Asian	1 tsp		1 Tbsp	3 Tbsp	2 tsp				2 tsp					2 tsp
Cajun	¾ tsp	1 tsp	2 tsp	2 tsp						¼ tsp				
Curry	1 tsp	½ tsp	1 Tbsp	1 ½ Tbsp	1 tsp	1 tsp						1 tsp		
Indian	1 tsp		2 tsp			2 tsp								
Italian	1 tsp	½ tsp		2 Tbsp							1 tsp		2 tsp	
Mexican	1 tsp			1 tsp			2 tsp							
Tex Mex	1 tsp	½ tsp	1 Tbsp	1 ½ Tbsp			4 tsp	½ tsp		½ tsp	1 tsp			

Spice Mixture Chart											500 Servings			
Mixture	Salt	Pepper	Garlic Powder	Onion Powder	Ginger Powder	Curry Powder	Chili Powder	Cumin	Dry Mustard	Paprika	Oregano	Tarragon	Basil	Parsley
American	3 Tbsp + 1 tsp	3 Tbsp + 1 tsp	6 Tbsp + 2 tsp											½ cup + 2 Tbsp
Asian	3 Tbsp + 1 tsp		½ cup + 2 Tbsp	1 ¾ cup + 2 Tbsp	6 Tbsp + 2 tsp				6 Tbsp + 2 tsp					6 Tbsp + 2 tsp
Cajun	2 Tbsp + 1 ½ tsp	3 Tbsp + 1 tsp	6 Tbsp + 2 tsp	6 Tbsp + 2 tsp						2 ½ tsp				
Curry	3 Tbsp + 1 tsp	1 Tbsp + 2 tsp	½ cup + 2 Tbsp	¾ cup + 3 Tbsp	3 Tbsp + 1 tsp	3 Tbsp + 1 tsp						3 Tbsp + 1 tsp		
Indian	3 Tbsp + 1 tsp		6 Tbsp + 2 tsp	3 Tbsp + 1 tsp		6 Tbsp + 2 tsp								
Italian	3 Tbsp + 1 tsp	1 Tbsp + 2 tsp	1 ½ cup + 1 tsp	1 ¼ cup							3 Tbsp + 1 tsp		6 Tbsp + 2 tsp	
Mexican	3 Tbsp + 1 tsp		6 Tbsp + 2 tsp	3 Tbsp + 1 tsp			6 Tbsp + 2 tsp							
Tex Mex	3 Tbsp + 1 tsp	1 Tbsp + 2 tsp	½ cup + 2 Tbsp	¾ cup + 3 Tbsp			¾ cup + 4 tsp	1 Tbsp + 2 tsp		1 Tbsp + 2 tsp	2 Tbsp + 1 tsp			



FUN FACTS

FRESH FRUIT & VEGETABLE PROGRAM (FFVP)

What is the FFVP?

The USDA's Fresh Fruit & Vegetable Program (FFVP) provides schools with funds to offer students, at no cost, fresh fruit and vegetable snacks during the school day.

What is the purpose of the program?

The purpose of the FFVP is to provide free, fresh fruits and vegetables to all enrolled students. The program currently operates in all 50 states and in over 200 elementary schools in Florida.

What are the benefits of eating more fresh fruits & vegetables?

Eating fresh fruit and vegetables develops healthy eating habits and provides more nutrients for growing children. Colorful fresh fruits and vegetables provide necessary vitamins, minerals, and fiber. A benefit of eating more fruits and vegetables is reducing the risk of certain chronic diseases.

KEY NUTRIENTS IN FRUITS & VEGETABLES

The Dietary Guidelines for Americans calls for individuals to eat more nutrient-rich foods. Fruits and vegetables can be great sources of the following important nutrients.

POTASSIUM



VITAMIN A



FOLATE



FIBER



VITAMIN C



MAGNESIUM



KEY NUTRIENTS IN FRUITS & VEGETABLES

- **Calcium:** Calcium is essential for healthy bones and teeth. It is also needed for normal functioning of muscles, nerves and some glands.
- **Fiber:** Diets rich in dietary fiber have been shown to have a number of beneficial effects, including decreased risk of coronary heart disease.
- **Folate:** Healthful diets with adequate folate may reduce a woman's risk of having a child with a brain or spinal cord defect.
- **Iron:** Needed for healthy blood and normal functioning of all cells.
- **Magnesium:** Magnesium is necessary for healthy bones and is involved with more than 300 enzymes in your body! Inadequate levels may result in muscle cramps and high blood pressure.
- **Potassium:** Diets rich in potassium may help to maintain a healthy blood pressure.
- **Sodium:** Needed for normal cell function throughout the body. Most diets contain too much sodium which is associated with high blood pressure.
- **Vitamin A:** Keeps eyes and skin healthy and helps protect against infections.
- **Vitamin C:** Helps heal cuts and wounds and keeps teeth and gums healthy.





USING & MARKETING FLORIDA PRODUCE

NUTRIENTS, FLAVOR, PRICE, COMMUNITY

The seasonality of crops affects the nutrient profile of fruits and vegetables. When food is sourced locally, the fruits and vegetables have a shorter journey to the market. This results in fresher produce that is better tasting! Fruits and vegetables are more abundant in peak season, and subsequently cost less for farmers and distributors to supply to you. Local, seasonal eating also supports local farmers, which helps support your local economy.

USE OF DESCRIPTIVE LANGUAGE

Often restaurants will use catchy, taste-focused, descriptions on their menus and marketing as a way of making an item more desirable. This same strategy is used in school cafeterias to highlight vegetables instead of the common health-focused approach. Children rarely make decisions based on health benefits; the main reason a food gets chosen is initially because it looks good; if it tastes good, it will be chosen again and again.

Highlighting specific flavors of the ingredients or preparation methods, along with words that suggest a positive experience through excitement, tradition, or geographic location, brings appeal to a dish and encourages children to try something new. This can be taken a step further by involving students in the creation of food labels or allowing them to vote for a food and description they will get to see served in their cafeteria soon.

COMBINATIONS FOR SUCCESS

More is more when it comes to implementing strategies to encourage healthy meals among school children, including vegetables. The SMART study underscores the importance of **using a combination of strategies to encourage consumption of vegetables**. Out of 489 school nutrition directors surveyed, 87% said they employ at least one strategy; however, the report says, **active approaches are more effective** than the traditional passive approaches (i.e., cafeteria signs, posters, or nutrition education messages on menus) more commonly used by programs.

SOME ACTIVE STRATEGIES TO ENCOURAGE CONSUMPTION OF VEGETABLES INCLUDE:

- Engaging students – Taste tests with children, school-wide events to promote nutrition education, and community events, are regarded as highly effective ways of encouraging students to select and consume more vegetables and other healthy options. Involving students in the creation of posters and signs that promote healthy eating is also recommended.
- Engaging school nutrition professionals – School nutrition staff can be turned into stewards of best practices and advocates of healthy eating, by taking advantage of training opportunities available from ICN, SNA, and USDA's Team Nutrition, to name a few. If possible, incorporate cooking demonstrations with staff in their training.
- Engaging school faculty, staff, and administrators – Provide teachers with nutrition education and promotional materials, and work with administrators to increase length of meal periods, change lunch or recess schedules, or change the cafeteria environment. Educate administrators on the role of school meals in student wellness and academic performance.

SEASONAL AVAILABILITY CALENDAR

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Blueberry												
Cantaloupe												
Grapefruit												
Mango												
Orange												
Strawberry												
Tangerine												
Watermelon												
Broccoli												
Collard Green												
Lettuce												
Spinach												
Red Pepper												
Carrot												
Tomato												
Potato												
Sweet Corn												
Avocado												
Cabbage												
Cauliflower												
Celery												
Cucumber												
Eggplant												
Green Pepper												
Mushroom												
Radish												
Snap Bean												
Squash												



SCHOOL GARDEN

Schools across the nation are using gardens to help children discover where food comes from and to develop healthy eating habits. Gardens provide a way for children to grow, harvest, prepare, and ultimately taste new fruits and vegetables. When appropriate precautions are taken fruits and vegetables from school gardens can be served safely to students. Before starting a school garden, check with your local health department about their policies on serving food grown in gardens in school meals.

Why garden with students?

In whatever form a school garden takes, it can support and enhance the learning environment of the school. They help by engaging curiosity, nurturing environmental awareness, improving self-esteem and interpersonal skills, promoting healthy eating and physical activity, and fostering academic achievement. Students love being in a garden and taking care of plants, watching them grow from tiny seedlings to food-bearing plants over the course of the growing season. School gardening contributes to a nurturing learning environment for the entire school community and beyond.

How do I create a successful school garden?

A Florida school garden will have some distinct differences from one grown in other regions of the country. Our particular climate and soils can be both a challenge and a boon to school gardening. This manual addresses the challenges and offers ideas for taking advantage of the positive aspects of Florida gardening. County Extension Agents with the UF Institute of Food and Agricultural Sciences (IFAS) have a wealth of experience and access to the latest research on optimizing gardens of all types. We are here to support your educational objectives and help make your Florida school garden a beautiful and bountiful place for students to learn.



TASTE TEST: HOW TO CONDUCT

When presenting a new product to students, it is vital to understand how it will perform in the eyes of the consumer. Providing a taste test gives you a chance to gain valuable insight into how the students feel about the food.

Create sample sizes of new recipes to be tasted

Test and sample

Provide Taste Test Response Sheet

Gather responses and adjust recipe based on feedback

Thoroughly testing a product before serving it significantly increases acceptability for students. Taste testing small samples with student customers is important to know how the items might be received. As stewards of program funds, any adjustments based on feedback might require further testing and another small batch completed before preparing full portions of new recipes.

TASTE TEST RESPONSE SHEET

Directions: For 6 questions below, circle the number that best answers each (1 is the worst and 6 is the best).

Food Item Tasted: _____		1	2	3	4	5	6		
How does the food look?		1	2	3	4	5	6		
How does the food taste?		1	2	3	4	5	6		
How is the texture/"mouth feel"? (e.g., too dry, mushy)		1	2	3	4	5	6		
How does the food smell?		1	2	3	4	5	6		
How would you rate the food overall?		1	2	3	4	5	6		
Overall Impression: Thumbs Up 	Thumbs Down 				Overall Score: _____				

RESOURCES

- <https://www.eatthis.com/healthy-dip-recipes/>
- Briscione & Parkhurst, Flavor Matrix, 2018.
- <https://sfyl.ifas.ufl.edu/sarasota-docs/hortres/GrowtoLearnSchoolGardeningGuide.pdf>
- <https://www.fdac.gov/Consumer-Resources/Buy-Fresh-From-Florida/Crops-in-Season>
- <https://ccmedia.fdac.gov/content/download/92163/file/fruit-and-vegetable-quick-crediting-guide.pdf>
- <https://ccmedia.fdac.gov/content/download/104732/file/vegetable-roasting-guide.pdf>
- <https://fruitsandveggies.org/>
- <https://www.fdac.gov/Food-Nutrition/Nutrition-Programs/National-School-Lunch-Program/Fresh-Fruit-and-Vegetable-Program>