

LiveWell Kids Garden and Nutrition Program

Lesson 5: Harvesting Cool-Season Crops and Enjoying Fresh Garden Foods

OBJECTIVES

By the end of this lesson, students will:

- Identify cool-season vegetables and their health benefits.
- Practice proper harvesting methods.
- Make connections between eating healthy and growing healthy foods by looking at MyPlate.
- Participate in preparing and tasting a healthy dish.

SUPPLIES

- Supplies to bring from classroom to garden arrange with the teacher ahead of time:
 - Paper one piece per student
 - Writing tools such as crayons, colored pencils, markers
- Supplies to use from the garden shed:

For the Harvesting Station

- Nutrition laminate: *MyPlate*
- o Scissors
- o 2 Large bowls (move to Food Prep Station after all produce is washed)

For the Washing Station

- Hand soap
- Paper towels (move to Food Prep Station after all produce is washed)
- o 2 Colanders
- 1 Vegetable scrubber
- o 1 Washing tub/bin

For the Food Prep/Tasting Station

- o 3 Small bowls
- 2 Large bowls
- Food handling gloves
- o 1 or 2 Cutting boards
- \circ 1 or 2 Knives
- o 1 Micro plane grater

- Paper towels
- \circ Olive oil
- o Date syrup
- Apple cider vinegar
- o Dry mustard

- o Salt
- Plastic wrap
- o Whisk
- Large, clear, plastic storage bin
- Sanitizing wipes

- \circ Paper food trays (1 per child)
- Plastic forks (1 per child)
- Folding table from shed (if applicable)
- Measuring spoons
- Large serving utensil for mixing

- Supplies to harvest from the garden:
 - o 2 Carrots
 - o 2 Beets
 - o 8 Kale leaves
 - At least 1 pea per child
 - o Optional: other herbs in the garden that you would like to add

PREPARATION

- Refer to the "Background and Preparation" document for details about preparing for the lesson one week prior and the day of. The document can be found at <u>https://www.bchd.org/LiveWellKids</u> and the inside of the shed door.
- Since this lesson involves a tasting, allow 45 minutes to set up.
- It is important to **check with the teacher about students with allergies**. Suggest that parents send a small amount of their own version of salad for their child if they have an allergy to any of the ingredients listed.
- The tasting includes the following ingredients:
 - o Beets
 - $\circ \quad \text{Carrots}$
 - o Kale leaves
 - o Peas
 - o Extra virgin olive oil
 - o Date syrup
 - Apple cider vinegar
 - Dry mustard
 - \circ Salt

SET-UP INSTRUCTIONS

Supplies for each station are detailed above.

- SET UP THE HARVESTING STATION:
 - Place the pruners, scissors, and 2 large bowls near the garden bed so they're ready to use for harvesting.
- SET UP THE WASHING STATION:
 - Place the hand soap and paper towel roll at the sink.
 - Place the washing tub/bin on the ground near the sink with the vegetable scrubber inside. Fill it 2/3 with water.
 - Place the colanders on the sink.
- SET UP THE FOOD PREP/TASTING STATION:
 - Use the picnic tables for this station.
 - Place all items (listed above) at one end of a table where you plan to stand and prep. If needed, you can also use the folding table from the shed if you have one.



INTRODUCTION & MINDFUL BREATHING

(ALL GRADES: 1 MINUTE)

- Introduce yourself and other volunteers.
- Guide students through a mindful breathing exercise.
- Explain the purpose of this lesson is to learn when and how to harvest cool-season crops, prepare a healthy dish and how MyPlate can be used as a nutrition guide.



NUTRITION: EATING FROM THE RAINBOW

(GRADES K-2: 5 MINUTES, GRADES 3-5: 8 MINUTES)

The nutrition section has two parts:

- 1. MyPlate (nutrition guidelines from the USDA)
- 2. Activity: My Menu Planner

Grades	MyPlate ¹
	Laminate - My Plate
K - 5 th	 MyPlate is a nutrition guide for adults and kids created by the U.S. Department of Agriculture (USDA). It uses a plate divided into colorful sections and a glass to show recommended portions of the five food groups in a healthy diet. It may be easier to think of the plate as a guide for the ENTIRE day rather than for each meal. The plate in MyPlate is divided into four main sections: 30% Vegetables 30% Fruits 20% Grains 20% Protein Throughout the day, try to make half of what you eat fruits and vegetables and the rest whole grains and lean protein. The glass represents low-fat dairy products. This serves as a reminder to include milk or another low-fat dairy food, such as cheese or yogurt. This is also intended to serve as a reminder to choose low-fat milk or water instead of sugary drinks.

	pe	IOTE: Many things make up a healthy diet, but something that may be healthy for one erson may not be healthy for another due to allergies, intolerances or food preferences. s important to keep that in mind when building your "MyPlate."
K - 2 nd	•	 Show the laminate, <i>MyPlate</i>. Volunteers can name all five parts of MyPlate and provide examples of each food group. Also ask the students for examples. Food Groups Fruits (banana, strawberries, blueberries, apples) Vegetables (carrots, lettuce, peppers, broccoli) Grains (whole-wheat bread, oatmeal, whole wheat tortillas, brown rice) Protein (chicken, beef, fish, beans, nuts, seeds and eggs) Dairy (yogurt, milk and cheese)
3 rd - 5 th	•	Ask students if they can name all five parts of MyPlate and give examples of each food group. Show the laminate, <i>MyPlate</i> .

Grades	Activity: My Menu Planner
K - 5 th	 It's important to have balanced meals and that includes breakfast. Ask the students how many have fruit for breakfast? How about vegetables? What about lunch and dinner? Do you get fruits and vegetables in those meals too? For this activity, tell students that they will plan their dinner for today and tomorrow. When they do this, remind them about MyPlate and suggest that they think of ways to include fruits and vegetables in their meals. Allow students to work in pairs or groups. Ask them to share their responses.



HARVESTING, WASHING AND PREPPING COOL-SEASON CROPS

(GRADES K-2: 15 MINUTES, GRADES 3-5: 20 MINUTES)

The garden section has three parts:

- 1. Harvesting produce from the garden
- 2. Washing the produce
- 3. Preparing the produce to eat

HARVESTING STATION

Grades	Harvesting Overview
K – 5 th	 Walk the class through the garden to observe and discuss what grew over the winter. Ask if anyone remembers what they planted in the Fall. Take them to the garden bed and have a couple of students at a time approach the bed to harvest their items. Follow the harvest instructions below to pick from the garden, using the plant facts as a guide to discuss each plant. As each student harvests, direct them to the washing station where they will wash their items. Use the bowls to collect produce if needed.

Grades	Harvesting: Peas
K — 5 th	 To harvest peas, instruct students to grasp the stem with one hand and use their fingernails to cut the pea from the stem with their other hand. Peas can be eaten at any stage but picking the largest peas will keep them from becoming overgrown and stimulate the plant to make more. Peas are in the same family as beans. They are legumes.² Legumes form seeds in a pod. Once the seeds are large enough, they burst out of the pod by splitting it along a seam and falling to the ground. All parts of the pea plant that grow above ground are edible and can be added.³ Feel free to have the students harvest leaves and tendrils and stems. If adding stems, use scissors or pruners to cut pieces of tender stem – they don't tear/cut well with fingernails.

Grades	Harvesting: Kale
K – 5 th	 Students will harvest kale by selecting an outer leaf and tracing it to the base with their fingers. Then, they'll pinch the leaf at the base, cutting it from the plant with their fingernails. Leave the younger, inner leaves on the plant to grow larger. Each plant needs 4-5 leaves to keep growing, so before picking a leaf, make sure that it has MORE THAN 5 leaves or move on to another plant that does. Tell students that this is just one of many types of cabbage, referred to as a <i>leaf cabbage</i>.⁴ This is a "loose leaf" green, harvested the same way as salad greens or lettuce.

*Students can pay attention during the tasting to see if kale tastes like other
members of the <i>Cruciferous</i> family, such as cabbage, broccoli, cauliflower, or
Brussels sprouts, to name a few. ⁵

Grades	Harvesting: Carrots
К — 5 th	 To harvest a carrot, have the students grasp all the leaves at the very base and wiggle the carrot until it loosens, then continue wiggling as they pull upward. Since carrots are large, swollen roots, they have a firm hold in the soil. They will sometimes break off at the leaves, staying in the ground if they aren't loosened enough before pulling up. Carrots come in orange, white, yellow, red, magenta, and purple. The nutrients differ according to the color. ⁶ People used to eat only the carrot's leaves and throw away the carrot until it was discovered that the root was edible and delicious. Carrots are in the same family as celery.⁷

Grades	Harvesting: Beets
К — 5 th	 To harvest a beet, instruct students to first check to see if it's ready by looking at the size of the crown of the beet. If the crown is not visible, they can brush the soil away from the base of the leaves to reveal it and trace the girth to be sure it's large enough. (You determine.) They grasp all the leaves at the very base and wiggle the beet until it loosens, then continue wiggling as they pull upward. Beets have a large taproot and will sometimes break off at the leaves, staying in the ground if they aren't loosened enough before being pulled up. Beets come in several colors such as golden, red, purple and striped.⁸

WASHING STATION

** Happening at the same time as harvest activity.

Grades	Washing
K – 5 th	 Have the teacher or helper monitor this station, as a line will most likely form. The students will wash in the wash bin one at a time. They should be able to move quickly but might need some prompting. Have the class stand in a line to avoid crowding around the washing area. Instruct one student at a time to come forward and wash their item in the bin. Items grown above ground will come clean by briefly swishing them in the water to rinse off any surface dirt, while items that grew underground can use a gentle brushing off under the water with the vegetable scrubber. As they finish their turn, have them put their washed items in the colanders to

allow excess water to drain.
• Send them to the Food Prep/Tasting Station where they will be directed to sit
at the tables and wait to watch the food prep demo.

FOOD PREP/TASTING STATION

**As students arrive, feel free to assign them a helping task if you feel comfortable. If you do so, instruct them to first go wash their hands at the sink.

Grades	Setting Up
K – 5 th	 Put on the food handling gloves. Wait to start the demo until all students are together at the Food Prep/Tasting Station, ready to listen. Explain that you will now make a PEA SALAD by combining the produce they harvested. Inform them that all produce scraps will go in the compost.

Grades	Prepping Beets
K – 5 th	 Take one of the beets from the colander and pat it dry with a paper towel. Explain that you will dice it and all items using the knife and cutting board. **Optional: Beet stems and leaves are edible and they can be added to the salad if you choose. Cut the greens off, leaving a few inches to use as a "handle" to hold it by. Turn the beet around and cut off the root. Using the peeler, gently peel the beet skin off. Discuss knife safety while they watch you demonstrate slicing a few slices of the beet (first), then cutting those slices into matchsticks. Put the sliced pieces into the large bowl and the save the root for the compost. Hand it over to your helper to complete while you demonstrate prepping the next item. ** Tip: If you only have one peeler, put the beet to the side and use the peeler for the next demo.

Grades	Prepping Carrots
K – 5th	 Take a carrot and pat it dry with a paper towel. Using the peeler, peel the outside of the carrot off until you have removed all the outer layer. Continue to peel the carrot, making a couple of "curls" and add them to the bowl. **Optional: Carrot greens are edible and they can be diced and added to the salad if you choose. Have the helper finish while you move on to prep the next item.

**Tip: If you only have one peeler, hand off both the beets and carrots to the helper so they can finish prepping these items while you continue the demo.

Grades	Prepping Kale
K – 5 th	 Take one of the kale leaves and pat it dry. Point out the rib that runs down the middle of the leaf. Let the students know that although it's edible, you will not be adding this part to the salad because of its fibrous texture. Holding the leaf by the end of the thicker part (the part that was connected to the plant), demonstrate tearing the soft, leafy green portion from the rib. Layer the leafy portions on the cutting board and finely chop them up with the knife. Leave the rest for your helper to finish and add to the bowl.

Grades	Prepping Peas
K – 5 th	 Pods: Hold up a pea in its pod for all to see. Let them know that both the pods, as well as the peas inside, are edible. Let them know that they can choose to either open them to eat just the peas inside or eat the pod and peas as one. Leaves: Hold up a pea leaf and let them know that this, and all parts of the plant above ground, are edible. Throw it in the bowl. Have the helper add any other picked leaves to the bowl. Tendrils: Hold up a tendril and let the students know that they are a delicacy item, sold at farmer's markets and specialty markets. Have your helper toss any other tendrils in the bowl - they don't need any prep. Stems: Hold up a piece of tender stem to show the students. Have your helper cut any stems into bite-sized pieces and add to the bowl.

Grades	Dressing the Salad	
K – 5 th	 In a smaller bowl, add the following ingredients: 3 Tablespoons of extra virgin olive oil 1 ½ Teaspoons of date syrup 1 Tablespoon of apple cider vinegar 2 Teaspoons of mustard ½ Teaspoon of salt 	

Directions
 Using the whisk, incorporate all ingredients and drizzle over salad and toss. Have your helper take the food trays and forks out of the storage bin. Spoon 1-2 tablespoons of the salad onto each food tray.
 Add at least one pea per food tray and serve with a paper towel.

MINDFUL TASTING

(GRADES K-2: 8 MINUTES, GRADES 3-5: 10 MINUTES)

Grades	Mindful Tasting
K – 5 th	 Take the students through a mindful tasting experience, using all their senses. Share with them some of the health benefits of what they might be tasting. You can also share this content while you make your salad. Peas contain protein, fiber, minerals, and vitamins such as folate, iron, potassium and magnesium.⁹ Kale is a "nutrition superstar" because it contains vitamins A, K, B6, C, calcium, potassium, copper, and manganese.¹⁰ Beets are high in fiber and potassium and very healthy for your heart.¹¹ Carrots are great for your heart and eyes, with large amounts of vitamin A¹² Explain that flavors can greatly change depending on how you combine ingredients. Some flavors are much stronger than others, so you might want to use less of them. To notice more subtle flavors, you will need to add more. Experimenting with different combinations of ingredients can sometimes result in delicious discoveries that might become a new favorite!

Sample script

We are going to enjoy the tasting together as a class. Before we begin our tasting, let's mindfully smell the food sample on our plates. Everyone take a deep breath like this (demonstrate.) Now, close your eyes and smell the ingredients. Do you recognize the smells? Does any smell stand out the most? Good, now open your eyes and look at the sample. Notice the colors, different shapes and sizes.

Now, take a small bite. How would you describe the taste? Is it sweet, sour, salty, bitter? See if you can chew it several times before swallowing. Does the taste change at all as you're chewing? Pay attention to the texture. Does it start out crunchy in your mouth and change as you chew? Do you taste all the flavors as a blend? Go ahead and continue practicing this mindful way of eating until you have finished the tasting.

REFLECTION PAGE

(GRADES K-2: OPTIONAL, GRADES 3-5: 5 MINUTES)

Grades	Reflection Page
K – 2 nd	 Due to time limits, this activity is <u>optional</u> for K – 2. Provide students with paper and writing tools to create a 'Reflection Page. Instruct them to draw or write about something that they experienced in the lesson. If you see any that you'd like to share with us (<u>Mishell.Balzer@bchd.org</u> and <u>Tami.Kachel@bchd.org</u>), take a photo before the students leave.
3 rd – 5 th	 Provide students with paper and writing tools to create a 'Reflection Page. Ask them to create their own recipe with vegetables that could be grown in the garden and illustrate it. If you see any that you'd like to share with us, take a photo before the students leave.

CLOSING

(ALL GRADES: 1 MINUTE)

- Recap what students learned in the lesson.
- Thank the teacher and other volunteers for helping.
- Thank the students for participating and dismiss them.
- Using the dish soap and scrub brush in the shed, clean up and put all supplies away.

*Don't forget to report your lesson as delivered with the online form – scan here:





WINTER PEA SALAD

Review the ingredients with your teacher in consideration of any food allergens.

This recipe is for a class of 35.

Salad ingredients:

- 2 Beets
- 2 Carrots
- 8 Kale leaves
- All the peas from your designated garden bed
- 1 Pea leaf per child
- 1 Pea tendril per child
- Optional: Beet greens, pea stems and carrot greens

Vinaigrette Ingredients:

- 3 Tablespoons of extra virgin olive oil
- 1 ½ Teaspoons of date syrup
- 1 Tablespoon of apple cider vinegar
- 2 teaspoons of mustard
- ½ teaspoon of salt

Directions:

- Peel outer skin from beets.
- Cut beets into slices first, then into matchsticks. Add to the large bowl.
- Peel outer layer from carrots.
- Peel carrots into 'curls' with the peeler and add to the large bowl.
- Strip the leafy green portions of the kale leaves from their spines (discard the spines.)
- Chop the kale leaves and add to the large bowl.
- Add all pea leaves and tendrils to the large bowl.
- Whisk all dressing ingredients in a small bowl first, then drizzle over salad and gently toss.
- **If adding beet greens, pea stems and/or carrot greens, cut into bite-sized pieces before adding to the bowl.

Serve:

- Have your helper assist you by taking the food trays and forks out of the storage bin.
- Spoon 1-2 tablespoons of the salad onto each food tray.
- Add 1-3 peas to each food tray.
- Serve with a fork and paper towel.
- Instruct the students to choose to either mix their pea pods into the salad or open the pod and mix the peas into the salad.

DID YOU KNOW? FUN FACTS!

Miniature carrots aren't grown that way. They are actually larger carrots that have been shaved down.¹³

In <u>Ireland</u>, kale or cabbage is mixed with mashed potatoes to make the traditional dish colcannon. It is popular on Halloween, when it may be served with sausages.¹⁴

Potatoes were the first vegetable to be grown in space (October 1995).¹⁵

Carrots were originally white.¹⁶

A cup of dried figs has the same amount of calcium as a cup of milk.¹⁷

One variety of kale, Jersey Kale, can grow up to 20 feet tall!¹⁸

Beets have the highest sugar content of any vegetable. About half of the sugar made all over the world is made from beets!¹⁹

Although full of healthy vitamins, minerals and fiber, durian is considered the world's smelliest fruit. Grown in Southeast Asia, this fruit has been described as smelling like rotting meat, garbage and sweaty gym socks!²⁰

While the ancient Greeks used beets primarily as medicine, the ancient Romans were the first to cultivate them as food.²¹

✤ A 100-calorie serving of peas contains more protein than a whole egg or tablespoon of peanut butter.²²

In 1984, Janet Harris broke a Guinness World Record by consuming 7175 peas in 60 minutes... using chopsticks!²³

RESOURCES

- ¹ Kids | MyPlate. (n.d.). Www.myplate.gov. https://www.myplate.gov/life-stages/kids
- ² Boston, 677 Huntington Avenue, and Ma 02115 +1495-1000. "Legumes and Pulses." *The Nutrition Source*, 28 Oct. 2019, www.hsph.harvard.edu/nutritionsource/legumes-pulses/#:~:text=A%20legume%20refers%20to%20any.
- ³ Tong, Cindy. "Growing Peas in Home Gardens." Extension.umn.edu, 2022, extension.umn.edu/vegetables/growing-peas.
- ⁴ Resources, University of California Agriculture and Natural. "Kale and Collards." Sonomamg.ucanr.edu,
- sonomamg.ucanr.edu/Vegetable_of_the_Month/Kale/. Accessed 24 Feb. 2023.

- ⁶ Staff, Editorial. "Do Multi-Colored Carrots Have Less Beta-Carotene?" Tufts Health & Nutrition Letter, 7 Apr. 2017,
- www.nutritionletter.tufts.edu/general-nutrition/do-multi-colored-carrots-have-less-beta-carotene/

⁷ Ferrie, A. (2016). *Apiaceae - an overview | ScienceDirect Topics*. Www.sciencedirect.com. https://www.sciencedirect.com/topics/agriculturaland-biological-sciences/apiaceae

⁸ Martin, O. (n.d.). Growing a Goosefoot Trio: Spinach, Beets and Chard. Retrieved February 24, 2023, from

https://agroecology.ucsc.edu/documents/for-the-gardener/beets.pdf

⁹ Lakshmi Mahan, Lauren Foster, and Wendy J. Dahl. (2020, January). *FSHN13-06/FS229: Beans, Peas, and Lentils: Health Benefits*. Edis.ifas.ufl.edu. https://edis.ifas.ufl.edu/publication/FS229

¹⁰ Carruthers, L. (2018, May 29). *The many types, health benefits of kale*. Mayo Clinic Health System.

https://www.mayoclinichealthsystem.org/hometown-health/speaking-of-health/the-many-types-and-health-benefits-of-kale#:~:text=NUTRITIONAL%20BENEFITS

¹¹ The Health Benefits of Beets. (2022, August 19). Cleveland Clinic. https://health.clevelandclinic.org/the-health-benefits-of-beets/ ¹² Reasons Why Carrots (of All Colors) Are Healthy For You. (2021, March 23). Health Essentials from Cleveland Clinic.

https://health.clevelandclinic.org/reasons-why-carrots-of-all-colors-are-healthy-for-you/

¹³ Contributors, W. E. (2022, August 22). *Health Benefits of Baby Carrots*. WebMD. https://www.webmd.com/diet/health-benefits-baby-carrots ¹⁴ Magazine, S., & Billock, J. (2018, October 26). *A Brief History of Ireland's Fortune-Telling Mashed Potato Dish (Recipe)*. Smithsonian Magazine. https://www.smithsonianmag.com/travel/colcannon-fortune-telling-mashed-dish-recipe-180970492/

¹⁵ 10 Juicy Facts about Fruit and Vegetables. (n.d.). Www.brighthorizons.co.uk. https://www.brighthorizons.co.uk/family-zone/family-resources/blog/2020/10/fruit-facts

¹⁶ Why are carrots orange? | Ask Dr. Universe | Washington State University. (2020, April 17). Ask Dr. Universe; Washington State University. https://askdruniverse.wsu.edu/2020/04/17/why-are-carrots-orange/

¹⁷ 10 Juicy Facts about Fruit and Vegetables. (n.d.). Www.brighthorizons.co.uk. https://www.brighthorizons.co.uk/family-zone/family-resources/blog/2020/10/fruit-facts

¹⁸ Prendergast, Hew D. V.; Rumball, Naomi (2000). "Walking Sticks as Seed Savers: The Case of the Jersey Kale [Brassica Oleracea L.

Convar. Acephala (DC.) Alef. Var. Viridis L.]". <u>Economic Botany</u>. **54** (2): 141–43. <u>doi:10.1007/bf02907817</u>. <u>JSTOR 4256285</u>.; republished <u>Plant</u> <u>Portraits</u>, <u>Royal Botanic Gardens</u>, <u>Kew</u> (pdf)

¹⁹ This Institution is An Equal Opportunity Provider Fresh Fruit and Veggie Program VEGGIE OF THE MONTH FRUIT OF THE MONTH Beets Kiwi. (n.d.). <u>https://dcps.dc.gov/sites/default/files/dc/sites/dcps/page_content/attachments/Feb%20-%20Beets-Kiwi.pdf</u>

²⁰ Durian Fruit - Smelly, But Also Incredibly Nutritious. (2016). Healthline. https://www.healthline.com/nutrition/durian-fruit

²¹ Levinson, J. (2020, February). Beets — The History, Myriad Uses, and Health Benefits of These Beloved Roots - Today's Dietitian Magazine. Www.todaysdietitian.com. https://www.todaysdietitian.com/newarchives/0220p26.shtml

²² U.S. Department of Agriculture. (2020). Protein Foods | MyPlate. Www.myplate.gov. https://www.myplate.gov/eat-healthy/protein-foods
 ²³ IDEA PUBLIC SCHOOLS Child Nutrition Program - Harvest of the Month Recipe. (2022, April).

⁵ Kowalewska, Agata. Cabbage-Family Vegetables Nutritional Value and Recipes. 2018.