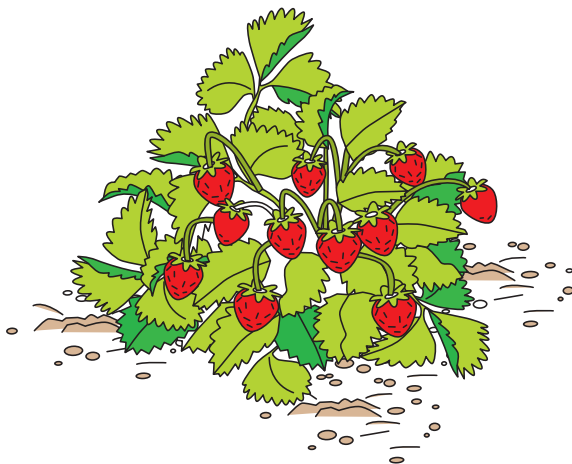




Lesson 4

Planting the Seeds for Healthier Eating

Now that students have a deeper understanding and appreciation of the colorful world of fruits and vegetables, it is time to learn where these foods come from. Students will discover that all fruits and vegetables start as seeds and grow into plants. They will also feel a sense of pride and accomplishment when they get a chance to grow something themselves.



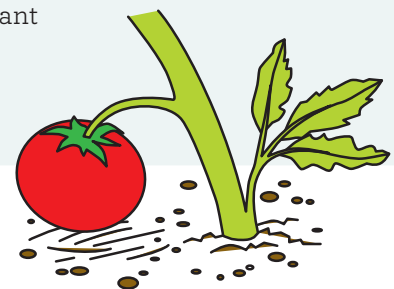
Learning Objectives

Students will be able to...

- Describe how edible fruits and vegetables grow from a seed to a plant.
- Name three things a plant needs to grow.

Essential Questions

- Where does food come from? How do fruits and vegetables grow?
- What does a plant need to grow?



Supplies and Preparation

Discover MyPlate Components*

- *The Five Food Groups* poster
- **Food Cards**
- **Garden Bite Look and Cook Recipe** (A copy for each student and to display. Teacher recipe instructions and supplies on pp. 83–85.)
- **Emergent Readers: *Where Food Comes From*** (Teacher and student versions)
- **Student Workbook** [WB; Activities 1–3, pp. 20–22]
- **STAR Chart**

Additional Supplies

- Suggested books** for **Book Club**:
 - *Tops and Bottoms* by Janet Stevens
 - *In the Garden with Dr. Carver* by Susan Grigsby
 - *Apple Countdown* by Joan Halub
 - *Water, Weed, and Wait* by Edith Hope Fine and Angela Demos Halpin
 - *The Ugly Vegetables* by Grace Lin

- Planting demonstration materials:
 - Dry pinto beans (1 per student)
 - 1 container (large enough to soak all beans in 1 cup of water)
 - Water (approximately 1 cup)
 - 1 spray bottle (to hold water)
 - 3–4 sheets of paper towels
 - 3–4 paper plates
 - Plastic wrap
 - Small clear plastic cups with drainage holes punched in the bottom (1 cup per student)
 - Potting soil (approximately 4 quarts)
 - Plastic spoons
 - Baking sheets/trays
 - Letter-sized plain white paper (3 sheets per student)
- Crayons, white paper, construction paper, scissors, glue, math manipulatives (or pennies, pretend money, or buttons for dramatic play), bulletin board paper, paint, star stickers, stapler, markers

* Order or download at TeamNutrition.USDA.gov.

** Mention of these materials is not an endorsement by the U.S. Department of Agriculture over other materials that may be available on this subject.

Warm Up (Whole Group; 20 minutes)

1. Begin by asking students what kinds of fruits and vegetables they ate for lunch (or ate yesterday). Invite students to circle any that are on **The Five Food Groups** poster, then chart their choices in the Activity Area. Ask: *Did you eat them at school for lunch or breakfast? Where do you think your school gets these foods from?* As they share, draw a store or farm on the board or poster.
2. Next, ask: *Where did the grocery store get them?* Allow students to think about experiences and observations, then share their ideas. For example, they may suggest farms, gardens, or trees.
3. Ask: *Have you ever seen fruits and vegetables growing (like when apple picking or in a garden at home)?* Explain to students that fruits and vegetables come from plants. Plants are living things. If possible, ask students to join you at the window and look outside. Ask students to name or point out different plants—trees, shrubs, flowers, etc.—that they see. Tell students that fruits and vegetables grow from seeds into plants, just like flowers do.
4. Explain that the fruits and vegetables that we eat are grown on plants in gardens and orchards, on farms, and in greenhouses. Ask students whether they have ever been to a farm or know of a garden in their community. People like gardeners and farmers work hard every day to grow plants, keep them healthy, and pick the fruits and vegetables we eat.
5. Ask students: *What do plants need to grow?* Explain that plants need certain things to grow: food (in soil), water, light, space, warmth, and air. Tell students that they will grow their own seeds in this lesson and learn how fruits and vegetables grow.

★Teacher Tip★

If you have a school garden, or access to a playground outside, continue this discussion outside while looking at plants.

Book Club (Whole Group; time will vary)

Read books with your class to further their learning about how fruits and vegetables grow. **Review Appendix A: Book Club (pp. 96–97) for suggested books with questions.** You may also find other selections in your library that can be used to generate a similar discussion.



Planting Demonstration

(Whole Group; 25 minutes, plus 5–10 minutes in subsequent days as plants grow)

Use the supplies listed on p. 45 for the following hands-on activity. It will activate your students' imaginations and cement their understanding of how plants—and fruits and vegetables—grow! This activity is intended for the observation of plant growth and not for the consumption of sprouts. Show students the farmer in the **Where Food Comes From Emergent Reader: Teacher's Edition**. Remind them that in this activity, they will be like the farmer!

Instructions:

- Cut white paper in half and distribute one half to each student. Give each student a bean to draw a picture of, and have them write “day 1” on top of their drawing.
- Collect the beans, put them in a container, and add water to cover. Allow to soak overnight.
- Dampen the paper towels and place each on a paper plate. Place 5 to 8 beans on each plate, keeping them to one side of the plate and separated slightly (beans should not be touching). Fold the empty half of the paper towel over the beans to cover them. Then cover the plates with plastic wrap.
- Store the beans in a dark location for about 3 days, after which the beans will start to sprout. Check the beans. Using another half sheet of paper, have students draw another picture from observation and write “day 3” on top.
- Using spoons, have students place potting soil into their plastic cup, a little more than half full.
- Let students place one bean sprout in a cup, near the edge, so they will see it through the side of the cup once it is covered with soil. Then, have students add another half inch of potting soil.
- Have students water the cups using a spray bottle until the soil is moist. Place them on trays by a window.
- Every 2 days, or when students notice a visible change, have them draw another picture (on a new half sheet of paper) of the plant and indicate the day. Continue until the plant grows to at least an inch above the soil. Each drawing can be stapled behind the previous drawing, ultimately forming a flip book of how plants grow.
- Have students describe what they notice during the process and at the end of the activity. What is growing? (*A plant/sprout*) Where is it growing from? (*The bean*) What do they think will grow from the bean seed? (*More beans*)

As a class, complete the **Student Workbook** activities **Time to Grow!** [WB, p. 20] and **Time for Strawberries** [WB, p. 22] to process and emphasize the growing cycle of a plant and what students will observe during their bean-growing activity. For **Time to Grow!** have students read each step about how a bean plant grows from seed to harvest. Have them describe what they see, if possible, using one of the bean sprouts or plants you are growing as a visual reference. Holding the plant, ask students: *What step is this plant in? What steps did it go through to get to this point? What happens next? What do we need to do to help it grow?*

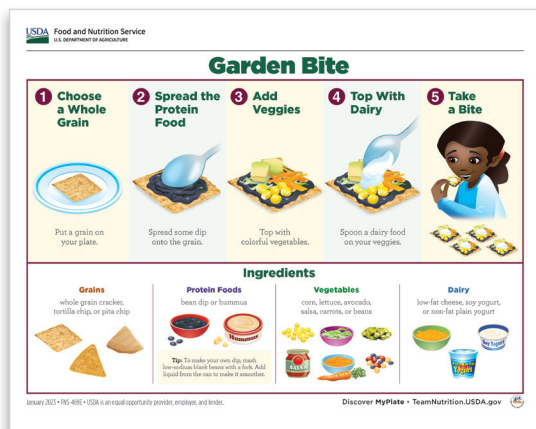


★Teacher Tip★

You may want to tie this demonstration to **Earth Day Celebration** ideas. See the Classroom Celebrations on pp. 70–75 for ideas.

Food Club (Whole Group; 25 minutes)**Garden Bite Look and Cook Activity**

(See pp. 83–85 for recipe ingredients, supplies, and step-by-step instructions.)



In this food preparation activity, students will choose protein, vegetable, and dairy foods to create a fun and healthy mini snack. Offering children ingredients to choose from engages them in making healthy choices. This activity also complements the food growing theme seen throughout Lesson 4. The veggies that grow on plants will soon be enjoyed on a **Garden Bite!**

1. Review the recipe and directions for making the **Garden Bite** on pp. 83–85. The recipe serves 20, so adjust the recipe amounts to suit the size of your class.
2. Talk with family volunteers or school nutrition services and decide how you will obtain food for the activity, who will do any advance preparation of the vegetables (such as rinsing and cutting), and where foods will be stored until ready for use.
3. Decide where and how you will conduct the food preparation activity. Will it be done in the classroom or the cafeteria? Depending on your class size, the number of adult assistants, and your schedule, you may decide to do the activity as a type of learning center, with small groups of students preparing the food (counting out crackers, washing veggies, etc.) while the remainder of the class works on other activities, such as the **Student Workbook** pages. Another idea is to set up multiple tables where groups of four–six students can all make their **Garden Bites** at the same time.
4. Clean all surfaces and follow the safe food-handling procedures discussed in the sidebar on p. 49. Have everyone participating in the food preparation wash their hands according to the directions in the sidebar.
5. Provide copies of the **Look and Cook Recipe** for each student. Review the steps of how they will make their **Garden Bite**. Tell students that they will create a fun-sized snack that features garden vegetables that they have been learning about. Show the children that beans can fall into two categories—they are in the Protein Foods Group and in the Vegetable group. Let the children decide what interesting combinations their own bites will have—including a grain, a protein food, one or more vegetables, and dairy toppers. Then they will get to eat what they created!
6. Display the **Look and Cook Recipe** (p. 83) where students can clearly see it as they make their **Garden Bites**.
7. Show students the food choices in each bowl. Talk about which foods belong to which food groups. Use **The Five Food Groups** poster to help with the discussion. Remind them to use the serving utensils, not fingers, to select foods. Encourage students to follow the instructions on the recipe. Assist students as needed. Together with the class, use markers to write the foods used in the recipe in the Activity Area on the poster.

Taste Testing Activity

If you don't have enough time or resources to make the **Garden Bite**, introduce the students to just the yogurt (or another dairy food) in a taste testing activity.

- Display the **Mary Dairy Food Group Friend Profile Card** on the board or flip chart. Tell the students yogurt is part of the Dairy Group. Talk about the other foods that are part of the Dairy Group (milk, cheese, soy yogurt, soy milk).
- Conduct the taste testing activity. See p. 107 for ideas on how to conduct the activity.

- To get things started, assemble your own **Garden Bite** so the children can see how you build it. After the tasting activity, ask students to talk about what they chose for their **Garden Bite**. Invite students to share other foods they might choose next time they make a **Garden Bite**. Use the poster to record their ideas. What other foods from the Protein Foods, Grains, or Dairy groups might they choose? Encourage the children to make **Garden Bites** with their families at home. Send a copy of the **Look and Cook Recipe** home with the children.
- Clean up. Have students work in pairs to wipe their desks and throw away used plates, utensils, and napkins. Cover and refrigerate any unused foods.

Cafeteria Connections (Whole Group; each activity 30 minutes)

Farm to School

If your school has a farm-to-school program, invite a local farmer to talk with the class about what food they grow, when it is planted and harvested, and what foods (if any) the farmer produces for the school. Or, invite a chef from a local restaurant to talk to students about where they get food, and what fruits and vegetables are used in the menu. Ask students: *Have you seen or eaten any of these foods in the cafeteria?* Invite the farmer (or chef) to reread the **Where Food Comes From Emergent Reader: Teacher's Edition** to the students.

★Teacher Tip★

If you don't have a Farm to School program, consider starting one! Check out the USDA Farm to School Planning Toolkit for ideas.
fns.usda.gov/cfs/farm-school-planning-toolkit



Like to Eat Fruits and Vegetables

As a class, review the school lunch menu. Highlight foods students have learned about during **Book Club** (such as, George Washington Carver's peanut butter, farm-fresh apples, lettuce that grows as "tops," and carrots that grow as "bottoms"). Have students practice reading, then writing, sentences in the following format using new food vocabulary and sight words:

- I like to eat _____ (fruits or vegetables).
- I like to eat _____ (color) _____ (fruits or vegetables).
- I like to eat _____ (color) _____ (fruits or vegetables) because _____.

Food Safety



Participants must follow these steps:

- Handwashing:** Wash hands using soap and water, scrub and lather for 20 seconds, rinse under running water, and dry using a clean paper towel.
- Surfaces:** Wash all tables, utensils, cutting boards, etc. with hot, soapy water. Wipe up spills immediately.
- Fruits and Vegetables:** Rinse produce thoroughly under running water before eating. Precut items labeled "prewashed" and "ready-to-eat," like lettuce or baby carrots, can be eaten without further rinsing.

Important Food Allergy and Disability Reminder

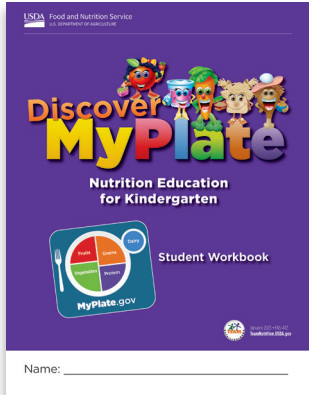
Remember to:

- Work with parents/caregivers, the school nurse, the Section 504 Coordinator, and/or Nutrition Services Director to make reasonable modifications to any recipes or food items suggested in these activities to accommodate requests related to food allergies or a disability in your classroom or school.
- Always follow your school and individual student's food allergy plan and individualized education program or 508 plan that includes information about a necessary meal modification due to a disability.



Literacy Center (Small Group; time will vary)

Use the **Emergent Readers** (Teacher and student versions) for listening, guided reading, or read-aloud exercises with students. Review sight words and new vocabulary learned in this lesson to build fluency and phonemic awareness, teach spelling patterns, practice writing, and promote key literacy concepts.



Student Workbook (Small Group; time will vary)

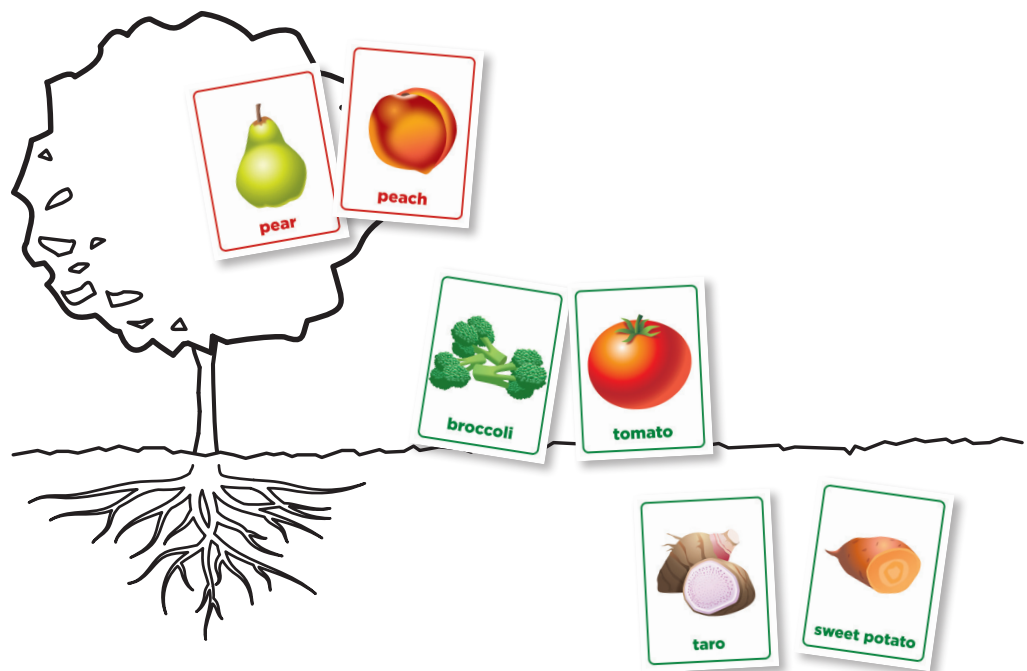
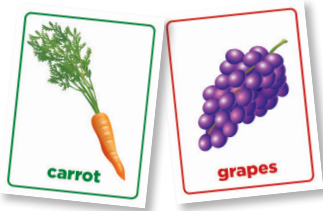
Have students complete workbook pages individually or in small groups.

- **Time to Grow!** [WB, p. 20] In this activity, children read about and color the steps for a bean plant to grow. Read the steps as a class. Introduce or review words like “grow,” “eat,” and “seed.”
- **1, 2, 3, 4 – Grow, Fruit and Veggies, Grow!** [WB, p. 21] Students practice counting skills in this activity, while also learning how some fruits and vegetables grow.
- **Time for Strawberries** [WB, p. 22] In this sequencing activity, students will discover how strawberries grow and learn to spell and write out the sight word “like” in a sentence.

Food Cards (Small Group: 3–4 students; 15 minutes)

Produce Pick!

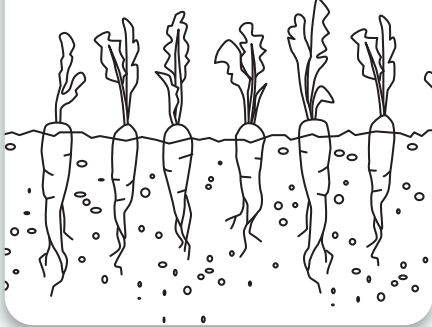
Draw pictures on the board of a tree and the soil line, showing below the soil line (dirt) and above (sky). Sort the **Food Cards** so that students can select either a fruit or a vegetable card. Once “picked,” discuss how that food grows—on trees, under the ground, or above ground (see examples p. 51). When the class decides how that fruit or vegetable grows, have students come up and point to the area of the picture that matches how it grows. Talk about experiences students may have had picking fruits and vegetables.



How Do Fruits and Veggies Grow?

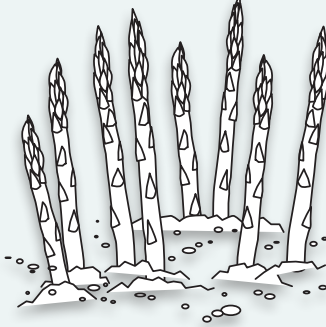
Did you know that fruits and vegetables grow in different ways and come from different parts of plants?

Below Ground



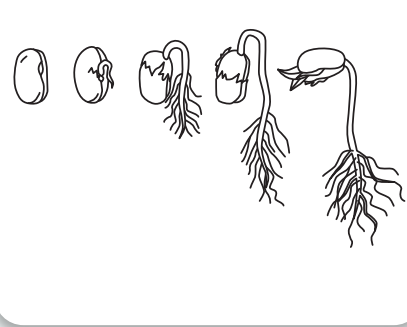
Some grow underground, such as **carrots**, onions, beets, and potatoes.

Above Ground



Some grow above ground, such as celery, rhubarb, **asparagus**, zucchini, tomatoes, avocados, oranges, watermelon, strawberries, apples, bananas, broccoli, pears, peppers, artichoke, leaf lettuce, spinach, grapes, kale, and kiwi.

As Seeds



Some are the seeds of a plant, such as corn, green peas, **beans**, and sunflower seeds.

Tip! See **Student Workbook** handouts *Time to Grow!* and *Time for Strawberries* [WB, p. 20, 22] for illustrations showing the steps of how a vegetable and a fruit grow from a seed.

Dramatic Play (Small Group; each activity 15 minutes)

Farm Fresh!

During dramatic playtime, allow students to run a pretend farmers market. Tell them that a farmers market is where growers go to sell their fruits and vegetables. If desired, one student can role play the farmer from *Where Food Comes From Emergent Reader* as she gets ready to take foods to the farmers market; another can role play Nate as a helper. Students can make signs selling their fresh fruit and vegetables (pretend foods, hand-drawn ones, or **Food Cards**), and sort them by color. They should write a price by each sign. Students can take turns running the market as farmers and “selling” their fruits and vegetables, suggesting foods for meals or snacks. Other students can “shop” for goods as customers using money (pennies, pretend money, buttons, or other math manipulatives in the classroom).



Ready, Set, Plant!

Ask students to make a pretend garden, orchard, or farm. They should work together to decide what types of fruits and vegetables to grow (such as apples, cabbage, or corn). Have them draw pictures of their farms and decide who will do the various jobs on the farm, like planting the crops, watering, and harvesting. They can make signs and invite others to come pick fresh produce at their farms and act out what that would be like.



Reflection & Assessment



(Whole Group; 20 minutes)

At the conclusion of the lesson, discuss as a class where fruits and vegetables come from and what plants need to grow. Have students draw one new fruit and one new vegetable that they learned about in this lesson. Help them write each fruit and vegetable name on their drawings. Display their labeled fruits and vegetables on a bulletin board. You can create a “My Food Grows” display with fruits and vegetables growing in a garden or on a tree, or create a “My Salad Grows” display with student drawings in large “salad” bowls. Add more fruits and vegetables to the board each day or week as you share what the class has tried, and reflect and build upon student vocabulary.

Reward each student with a star or sticker for their efforts and ability to meet this lesson’s achievement markers (see below). Students may add their stars or stickers to the **STAR Chart**.

If you have time, check in with individual students and review information with those who need more assistance. Remember to send home the **Discover MyPlate with Nate and Kate Parent Handout** and **Garden Bite Look and Cook Recipe**.

Lesson 4 Achievement Markers

- Planted a bean sprout
- Identified the sequence in the plant life cycle as a bean grows from a seed to plant
- Named three things a plant needs to grow

★ **Award a star or sticker for each achievement!**

Extra Helpings

Growing Together

(Small Group; 40 minutes)

Students can paint a group mural of a garden growing different fruits and vegetables. Each student can sign their name somewhere on the painting, and it can be displayed as part of a “Growing Together” display near the plants that they are growing.

(Whole Group; time will vary)

Take a field trip to a local farm to see fruits and vegetables growing. Or invite a local farmer to visit the class and talk about a fruit or vegetable they are growing.

