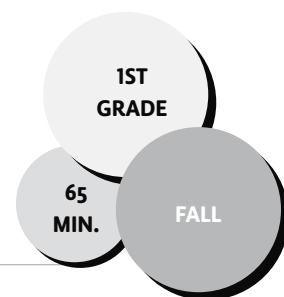


Planting a Tops and Bottoms Bed

THEME: GROWING AND ACCESSING NOURISHING FOOD



ESSENTIAL QUESTION

Why is each part of a plant important for people to eat?

LEARNING OBJECTIVES

- ✓ Students will be able to name the different parts of a plant.
- ✓ Students will be able to plant starts in a garden.

CONCEPTS

nutrients pollinate six plant parts

ENGAGING THE CLASSROOM TEACHER

- This lesson is highly dependent on the classroom teacher and even a third adult supporting the craft rotations. Discuss with the teacher ahead of time, and consider streamlining to just one craft, if necessary.
- See if the teacher has an easy way to divide the class into three groups.
- During Action Step 2, have the teacher and another adult supervise the craft rotations

LESSON DESCRIPTION

In this lesson, students review the book *Tops and Bottoms*, which they read in the fall lesson, Plant Part Scavenger Hunt, and rotate through activities in the garden centered on leafy tops

and root bottoms. Students plant a Tops and Bottoms bed, make leaf rubbings, and use potatoes as stamps for printing. They then sample the greens and roots they've planted. (It will be key to have the classroom teacher and a second adult volunteer supervise the craft rotations while you assist students in planting.) Depending on your region, you'll want to schedule this lesson as early in the school year as you can, so plants have time to establish themselves before days become shorter. This lesson is designed to be taught in conjunction with Plant Part Scavenger Hunt, in which students first read the book, and Tops and Bottoms Popsicles.

MATERIALS

For Whole-Class Activities:

- *Tops and Bottoms* by Janet Stevens
- Hand soap or hand sanitizer
- Paper towels
- Small, raw sample of vegetables students will plant, such as turnips and lettuce or collards or beets and collards

For Planting Station:

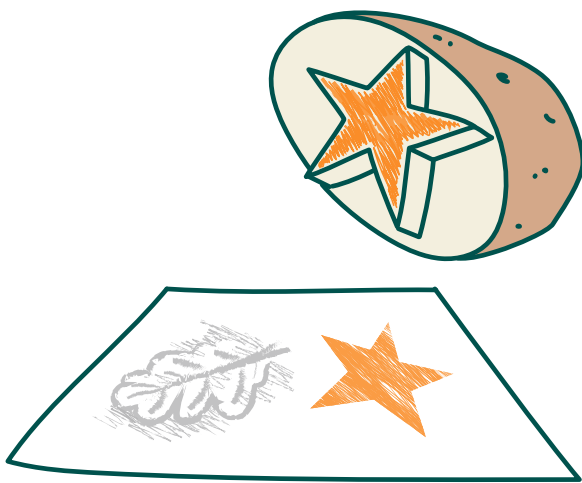
- Transplants of leafy greens, such as lettuce, kale, chard, or spinach (1 for every 2–3 students)
- Seeds for root vegetables, such as carrots, radishes, or beets
- 5 trowels
- 3–5 watering cans
- Plant labels
- Pencils to write on plant labels
- Access to hose for refilling water

For Leaf Rubbing Station:

- Crayons with paper peeled off
- 1 sheet of paper for each student
- Clipboards

For Stamping Station:

- 4–5 large potatoes
- Tempera paint or a few different colored stamp pads
- 1 sheet of paper or cardstock for each student
- Newspaper or vinyl tablecloth
- Pencil or permanent marker (for writing names on prints)



PREPARATION

- › Determine the vegetables you'll be planting based on your region. Depending on your location, you might want to schedule this lesson as early in the fall as possible, so your plants get plenty of light and time to grow before winter.
- › Scout locations to set up the two different craft projects. You might put down newspaper or vinyl tablecloth secured with heavy rocks. Keep in mind you'll need a smooth surface for both crafts so the texture of the table or ground doesn't show up in the print you make, which is why clipboards might come in handy.

- › Peel the paper off the crayons so that students have a broad surface for making leaf rubbings.
- › Slice the potatoes in half. You can use a paring knife to carefully create stamps from the cut sides of your potatoes, such as hearts, stars, and triangles.
- › If using tempera paint, put different paints into small trays (you can reuse the tops of large yogurt containers or other food packaging). Designate one potato stamp for each color.
- › Troubleshoot each craft beforehand to anticipate any snags with materials students might experience.
- › Place all materials for the Stamping Station at one table and those for the Leaf Rubbing Station at the other table. Place all materials for the Planting Station near the bed where you'll be planting and all materials for the tasting near the space where you'll gather the class at the end for the tasting.
- › Wash and prepare the vegetables for tasting, slicing root vegetables into a small piece for each student.

ACTION STEPS

1. Engage: Gather students in a circle, and reread or review the book *Tops and Bottoms*. Ask students *How is Hare able to trick Bear?* Ask, *If you were Hare, what plants would you plant to trick Bear? Which parts of the plant would you like to keep?* Discuss how there are different parts of every plant that we like to eat. Explain, *Today we'll be planting a *Tops and Bottoms* bed, which means that we'll plant some plants that we eat the tops or the greens of, and we'll plant some plants that we eat the bottoms or the roots of.* **(5–10 min.)**

2. Rotations: Briefly explain the rotations to students, showing them the two plants you'll be planting. Ask them to determine which is grown for the tops and which is grown for the bottoms. Say, *While some students are planting, other students will be making Tops and Bottoms art! We'll make art with leaves from our garden and use potatoes as stamps, and then we'll switch so everyone gets a turn.* Divide the class into three groups, and demonstrate the signal they'll hear to know it's time to switch. **(5 min.)**

a. Planting: Gather a small group around the bed you'll be planting in, and demonstrate how to plant your transplants or seeds. Model tool safety, pointing out to students how you keep your tool low and go slow, minding your neighbors. Pass out a start or a handful of seeds to pairs of students or groups of three if you have a large class or small planting space. As students are digging their holes, monitor that they're not planting too close to their neighbors. Once the plants are in the ground, pass out watering cans to planting partners, and make sure plants are thoroughly watered. Help students make a label with the name of what they planted and the date, and stick it in that part of the bed. **(10 min.)**

b. Leaf Rubbing: Have students explore the garden to find a couple leaves of which they'd like to make rubbings. If you don't have an extra adult for supervision, you might look for leaves as a class before you break into groups, showing students how to use two hands to harvest a leaf so they don't hurt the rest of the plant. Have students turn the leaf so its underside is face up with its veins in relief. Next have them place paper on top, and rub a crayon on its side across the leaf, pressing until they see

the leaf's impression coming through. Students can exchange leaves once they've made a rubbing with their own. **(10 min.)**

c. Stamping: Show students the potato stamps you've created, and explain the importance of keeping the stamps with their "home color" so that we don't mix all the colors. Then have students use halved potato stamps to create prints. They can do this on cardstock to make cards or bookmarks, or use blank paper to create works of art. **(10 min.)**

3. Hand-Washing Break: Have students clean up their station and then wash their hands. **(10 min.)**

4. Tasting: Have students gather back in a circle. Pass out small samples of your leaf and root vegetables. **(5 min.)**

REFLECTION

Have students discuss the following questions in small groups, then share with the class: **(5 min.)**

Social and emotional learning

- Ask yourself: Was I safe and respectful in the garden today?
- Ask yourself: Did I share and help my classmates?

Check for understanding

- What parts of the plant are the tops that grow above the ground? What parts of the plant are the bottoms that grow below?
- What interesting plant parts did you find in our garden today?
- How would you teach someone how to plant in a garden?
- When do you think our tops and bottoms will be ready to harvest (or pick)?

ADAPTATIONS

Song: Sing “Roots, Stems, Leaves” by the Banana Slug String Band to review the six plant parts, performing the gestures associated with each plant part.

Observation Extension: Return to the garden once a week for students to observe their seedlings’ germination and growth.

ACADEMIC CONNECTIONS

Next Generation Science Standards, Life Science Disciplinary Core Idea

NGSS: LSI.A

All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.

CCSS.ELA-LITERACY.RL.1.2

Retell stories, including key details, and demonstrate understanding of their central message or lesson.

CCSS.ELA-LITERACY.RL.1.3

Describe characters, settings, and major events in a story, using key details.