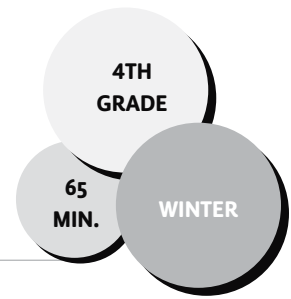


A Patchwork Garden Quilt

THEME: GROWING AND ACCESSING NOURISHING FOOD



ESSENTIAL QUESTION

How can we effectively plan a garden?

LEARNING OBJECTIVES

- ✓ Students will be able to interpret a seed spacing guide to create a garden bed design.
- ✓ Students will be able to measure and apply a scale to create a garden bed design.

CONCEPTS

feet inches measurement scale

ENGAGING THE CLASSROOM TEACHER

- Prior to the lesson, ask the teacher about students' level of familiarity with converting measurements to scale. Together you can determine a realistic expectation for the final product.
- Ask the teacher whether they'd like to co-teach or lead Action Step 4 in which you explain the scale.
- During Action Step 2, suggest that the teacher ensure students are moving their bodies respectfully and responsibly during the role play.
- During Action Step 5, suggest that the teacher support students in creating their personal garden beds, helping them interpret the seed spacing guide and understand the graph measurements.

LESSON DESCRIPTION

In this lesson, students learn to read a seed spacing guide and learn how to design a 5' x 5' imaginary garden bed using chart paper. Students then combine the individual squares into a paper "quilt" made to look like a garden! See lesson Garden Grids for more on square-foot gardening.

MATERIALS

- Piece of graph paper for each student
- Rulers
- Pencils
- Markers
- Glue
- Large piece of butcher paper
- Seed spacing guide (see High Mowing Seeds Planting Chart online)
- Seed catalogs for inspiration
- Dry erase marker and whiteboard for each student (optional)

PREPARATION

- › If your classroom doesn't have a document camera for you to display your graph paper, prepare a square grid on the blackboard.

ACTION STEPS

1. Introduction: Explain to students that today they're going to create their own imaginary garden bed with some of their favorite fruits and vegetables. Have students sit in a circle. Say, *Now take two scoots in closer to the circle, so we're*

all really close together. Then ask students to lift their arms and stretch out. Ask, *Are you able to stretch as much as you'd like? Why not?* Now ask them to take three scoots back and try again. Ask if that feels better. Say, *Plants are just like us. They can't grow as big and healthy and happy as they'd like to if they don't have enough space away from their neighbors. This includes plants we didn't plant, which is why we weed, which means to remove unwanted plants. (5 min.)*

2. Role Playing: Gather students in a circle.

Explain, *It's nice to have a variety of plants in our garden. And like people, plants come in all different shapes and sizes and have different needs. Right now, we are going to imagine we are the plants in the garden bed and use our bodies to pretend how we might arrange the variety of plants we plan to grow so that every plant gets what they need. Not all plants need the same amount of room.* Have students stand up and turn the circle into a square. Say, *Let's pretend the space in the middle is one foot in a garden box. How many inches are in a foot? If I have to space lettuce every three inches, how many lettuce plants can I fit in my foot?* Have students calculate using whiteboards, if you have them. Ask for four volunteers to be lettuce plants and one to be a gardener. Have the gardener evenly space the four lettuce plants across the carpet. Then ask, *What if my garden box were three feet? How many more lettuce plants could I add?* Have students do the math, and have the gardener add more "lettuce plants." Then say, *I want to add tomatoes in the next row of my garden. Do you think I can add as many tomato plants as lettuce plants?* Discuss the answer. Then tell students that a tomato plant needs at least one or two feet of space. Ask, *So how many tomato plants can we fit?* Have the gardener plant one tomato plant, and have the

student pretending to be a tomato stretch out their arms to show the space taken up. You may want to point out that the tomato could shade the lettuce, which would be a problem with other plant varieties that are sun-loving, but that it's actually helpful for lettuce in hot weather. Have students orally summarize that in a 3' x 3' bed they planted one row of twelve lettuce plants and one row with just one tomato plant. Explain to students that farmers need to do this same kind of planning to get our food to us. **(10 min.)**

3. Reading Seed Charts: Have students return to their desks, and show them a seed spacing guide. Read one or two examples as a class, and check for understanding by asking comprehension questions. **(5 min.)**

4. Modeling the Activity: Explain to students that they're going to use the seed spacing guide to plan their own, imaginary 3' x 3' garden bed. Using a document camera or a graph on the board, draw your own 3' x 3' bed, with each graph square representing a 4-inch square and each 9-square cube representing one square foot. Model adding plants by illustrating them in the graph at the appropriate scale, using the seed spacing guide and the scale. Give students guidelines that ensure they'll put adequate thought into their square. Encourage thinking about planting a variety of plants based on characteristics, preferences, and growing needs, such as, *Incorporate at least three different flower shapes or plant colors into your plan. (10 min.)*

5. Making Personal Garden Beds: Have student helpers pass out graph paper and materials. Circulate through the room, providing guidance to students who need it and asking probing questions. **(20 min.)**

6. Sharing: Have students clean up their spaces and bring their square to the circle. Have students lay them side-by-side, creating a large quilt of their garden beds. Then ask the reflection questions listed below. After class, glue the squares together on large butcher paper or a bulletin board to create a square quilt. **(10 min.)**

REFLECTION

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

Social and emotional learning

- *What did you enjoy about creating your own garden bed?*
- *What was challenging during this activity? How did you handle it or come up with a solution?*

Check for understanding

- *Why is it important to think about seed spacing when planning a garden bed? What other considerations do you have when planning?*
- *How does planting more than one type of food in our garden affect us?*
- *Our Garden Quilt represents the class community garden we would plant. It shares our community's similar and different plant preferences and plant interests. What are some things you see in common between the beds? What are some differences? What are some benefits of having a variety of plants in the garden?*

ADAPTATIONS

Extension: Share a companion planting chart with students, and ask them to consider plant “friends” and “foes” when making their plans. Incorporate more math practice by asking

students to calculate the square footage in one garden plot and then the square footage in the total class garden. Bring in a compass, and mark the cardinal directions on your garden models. Then discuss planting tall plants on the north side of the beds so they don't shade the other plants.

Garden Setting: If you have a garden space, have students work in teams to take measurements of your garden beds and make real plans for spring planting.

ACADEMIC CONNECTIONS

Math Common Core State Standards

CCSS.MATH.CONTENT.4.MD.A.1

Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.