

Making A Garden Map

*A lesson from the New Jersey Agricultural Society
Learning Through Gardening program*

OVERVIEW: What's the first step to planting a vegetable garden? Make a plan! Seeds and seedlings can't be plopped just anywhere in the garden. Different plants require different amounts of space to grow. And plants grow to different heights, so you need make sure that tall plants don't shade the smaller plants. Before you go out to the garden, teach your students how to determine how much space their plants need. Then have them draw a map of their garden on graph paper. This activity gives your students a chance to use their math skills in a real-life setting. It also gives them ownership of the garden from the start.



GRADES: 3-5

OBJECTIVES: The student will be able to:

- Research the space requirements and height of plants by using seed packets, seed catalogs, or websites.
- Calculate the perimeter and area of the school's garden beds.
- Use graph paper to map out a garden plot according to the space requirements of different plants.
- Plant seeds and/or seedlings according to garden map.

MATERIALS:

Seed packets, seed catalogs, or access to the Internet
Garden Planning Chart copies for each student
Graph paper for each student

PROCEDURE:

Begin a discussion with students about how you will plant your vegetable garden. Ask students what they know about how to plant a garden. What things do they need to consider?

Explain that different plants grow to different sizes and thus need a different amount of space in the garden. If plants are too crowded, they will compete for water and nutrients. Also, taller plants might shade shorter plants from the sun. Ask students where they think they might find information about the space each type of plant needs in the garden.

Discuss what vegetables you will be growing depending on the season. Distribute seed packets or seed catalogs, or show students how to find planting directions on the Internet (www.burpee.com and other seed companies are good sources.) Students may work in small groups, but have each student complete his or her own *Garden Planning Chart*.

Before students begin, explain that very small seeds, such as lettuce, spinach, or radish seeds, cannot be planted one by one in the garden. They are sprinkled in the row and some are later pulled out – this is called “thinning” – if the plants are too crowded.

When students have completed their garden planning charts, take them out to the garden and ask them to measure and calculate the perimeter and the area.

Back in the classroom, have students in small groups draw the garden space on graph paper with one square equaling one square foot. Ask the students to then draw a map where the different types of vegetables will be planted according to their space requirements. If your garden is in the ground and not in raised beds, tell students to remember to include walking space between garden beds. Have each group present their garden plan to the whole class. After students have discussed each plan, ask them to vote on the map they think is the best plan for their garden.

Next discuss with students the tasks necessary to plant all the vegetables and list them on the board or on chart paper. Assign everyone a task. Then take everyone out to the garden to plant!

EVALUATION:

Completed *Garden Planning Chart* and teacher observation of small group participation.

EXTENSIONS:

Ask older students to create garden maps for younger students who are planting a garden plot, and then have them assist the younger students in following the plan.

Explore varieties of vegetables. Are all lettuces or radishes the same? What varieties are your students planning to plant? Ask your students to research the differences between hybrid or heirloom tomatoes, sweet and hot peppers, or winter and summer squashes.

Ask students to use algebraic equations when planning the garden.

Ask students to create a garden that includes other shapes such as circles, triangles, and octagons.

Ask students to create a three-dimensional garden that includes fencing, wire cages, or climbing poles.

New Jersey Learning Standards

Math: 3.MD, 3.NF 4.NF, 4.MD.A,B 5.NF, 5.MD.A

