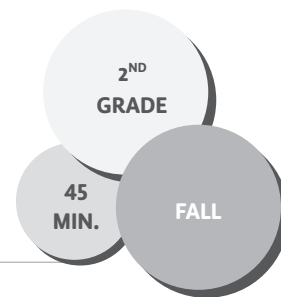


Biodiversity in the Garden

THEME: EXPLORING THE ECOLOGY OF FOOD



ESSENTIAL QUESTION

Why is diversity in the garden important?

LEARNING OBJECTIVES

- ✓ Students will be able to describe the diversity they find in the garden.
- ✓ Students will be able to sow seeds.

LESSON DESCRIPTION

In this lesson, students consider the importance of biodiversity by observing and drawing all the life in one square of their garden. They then learn about companion planting, and they sow or transplant “plant friends” in the garden.

MATERIALS

- Yarn or string
- Scissors
- Seeds or transplants appropriate for your growing region

For each pair of students:

- Magnifying lens
- Paper
- Clipboard
- Pencils
- Watering can

PREPARATION

- › Research what plants grow well in your climate in the fall.

- › Measure and cut a 48-inch piece of yarn for each pair of students.
- › Prepare a bed for planting.

ACTION STEPS

1. Engage: In the garden, gather students in a circle and explain, *Today we’re going to be thinking about all the different types of plants and animals that we find in nature and in our garden.*

Demonstrate for students how to take a piece of string and tie the two ends together to make a circle. Then lay your string in a square shape on the ground where students can see. Ask students, *How many different living things can you see in this circle? How many living things do you think we’d find if we looked closer?* Explain that you’ll give pairs of students a piece of string that they’ll lay on the ground somewhere in the garden and then look closely with magnifying lenses to observe all the living things they can find. Review the expectations for being in the garden, such as students staying where you can see them and not disturbing freshly planted seeds, etc. **(5 min.)**

2. Life in a Square Foot: Explain that pairs will draw a picture together of each different plant or animal they find in their square, and they should label the living creatures if they think they know their name. Note that some of the creatures might be in the soil. Say, *You’ll have to get really close and be really still to see all*

the living creatures! Pass out string, magnifiers, and clipboards with paper and pencil to pairs of students. Circulate through the garden, encouraging students to look closely and try to identify all the life they discover. **(10 min.)**

3. Discussing Benefits of Diversity: Call students back together, and have them share what they found. Go around the circle and have each pair share one living thing they observed that hasn't already been said. Explain that having all these different types of living things is called diversity. Have students repeat the word diversity, and then ask, *Why do you think it's good to have diversity in our garden? How does having diversity in our garden help the plants and animals live there? How does it help the people who harvest food from there?* Have pairs turn and talk to each other. Get to the idea of diversity in the garden meaning diversity on our plate. **(5 min.)**

4. Learning about Companion Plants: Explain to students that certain plants help other plants in the garden. Say, *These are plant friends. Like a friend, certain plants can help other plants grow strong and be healthy. For example, the marigold plant, which has beautiful flowers, can attract bees and other pollinators, so a plant will grow fruit, but it can also keep away pests that would hurt the plant. Or a sunflower can help give plants, like beans or cucumbers, a place to climb because that's what they like.* Explain that you'll be planting some plant friends in your garden today. **(5 min.)**

5. Planting: In the fall, you might have pairs of students plant carrots and radishes because the radishes will help break up the soil for the carrot taproots. Or consider planting nitrogen-fixing fava beans with nitrogen-loving lettuce. Or plant

garlic next to a brassica such as cabbage, kale, or broccoli to help deter aphids. **(15 min.)**

REFLECTION

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

- *What were you surprised to find inside your circle?*
- *How did we help the plants in our garden today?*
- *Why is diversity in our garden important?*
- *Why is diversity in the foods we eat important?*
- *Why is diversity in our community important?*

ADAPTATIONS

Science Inquiry: Have students create a control garden bed in which you don't plant a companion crop. Over the season, students can make observations about the health and growth of the crop with a nearby plant ally, versus the crop growing alone.

Soil Study: Have students investigate the biodiversity in the soil. Explain that plants grow well with a diversity of life in the soil, just like we grow well when we eat many different plants.

ACADEMIC CONNECTIONS

Next Generation Science Standards, Life Science Disciplinary Core Idea

NGSS.LS4.D

Biodiversity and Humans

There are many different kinds of living things in any area, and they exist in different places on land and in water.