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TIP:
After designing the garden bed, construct a worksheet that has students practicing addition to find the sum of the total number of plants in each bed.

LESSON

TRANSPLANTING COMPANIONS

DESCRIPTION

Students learn about symbiotic relationships with garden plants.

BACKGROUND INFORMATION

Long ago, people started noticing that some plants grew particularly well together. Companion planting is the ancient art and science of placing garden plants near or away from each other to enhance their growth. Native American Iroquois have been planting corn, beans, and squash, also known as the "Three Sisters," since ancient times. The three crops help each other: corn provides a structure for the beans to climb, beans provide the nitrogen that feeds the other plants, and squash covers the ground, preventing weeds and deterring pests. The three also help each other in the human diet - together they contain all essential amino acids as well as many important vitamins and minerals.

OBJECTIVE

- Students learn about symbiotic relationships between specific plants in the garden.
- Students understand companion planting.

STANDARDS

LS2.A Interdependent relationships in ecosystems

Organisms depend on their surroundings to obtain the materials they need to grow and survive. Different plants survive better in different settings due to their varied needs.

(EEI) 1.2.a. Surviving and Thriving

Students know different plants and animals inhabit different kinds of environments and have external features that help them thrive in different kinds of places.

(1.OA) Operations and Algebraic Thinking

Add and subtract within 20.

MATERIALS

- Seedlings with at least 2 true leaves
- Space in your garden
- Trowels
- Gloves
- Corn seedlings, bean and squash seeds
- Watering cans, water

TIME

PREP: 3 HOURS, ACTIVITY: 1 HOUR

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PREP

Amend your beds in the months leading up to this lesson- corn and squash are both considered "heavy feeders," or plants that take a lot of nutrients from the soil.

Start corn seeds one month before you plan on doing this lesson, or purchase organic seedlings. They should be about 4" tall.

ACTIVITY

1. Prepare your planting area. Mound the soil about four inches high every 5' (measured from the center of each mound). In each mound, create a small, 6" x 6" indentation for planting.
2. Transplant 4 corn seedlings in the corners of the 6" x 6" indentation. Press the soil around the seedling firmly but not too tightly.
3. Next, plant four beans between the corn seedlings. Each seed should be about 3" away from the corn plants.
4. Between the corn and bean mounds, make a second set of identical mounds for the squash with the same 6" x 6" indentations in the middle. Plant 3 squash seeds about 4" apart in these indentations.
5. Water the mounds thoroughly! When squash seedlings germinate, thin to two plants. Weed regularly until the plants become established.

DISCUSSION

1. What is companion planting?
2. Do all plants need the same amount of nutrients to grow best?
3. What do the corn, beans, and squash do for each other?