

Three Sisters

Objective

Students will read about the Three Sisters method of planting used by some American tribes and conduct an experiment the bean, pumpkin and corn seeds.

Three Sisters

Three beautiful women came to their dwellings on a snowy night. One was a tall woman dressed all in yellow, with long flowing hair. The second wore green, and the third was robed in orange. The three came inside to shelter by the fire. Food was scarce but the visiting strangers were fed generously, sharing in the little that the people had left. In gratitude for their generosity, the three sisters revealed their true identities—corn, beans, and squash—and gave themselves to the people in a bundle of seeds so that they might never go hungry again.

—from Kimmerer, Robin Wall, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*, Milkweed, 2015.

Materials

- plastic zip top jewelry bags
- cotton balls
- bean, pumpkin and corn seeds

Procedures

1. Read and discuss the information included with this lesson about “Three Sisters Gardening.”
 - Provide cotton balls, jewelry bags and corn, bean and pumpkin seeds.
 - Students will place one each of the seeds in the jewelry bags along with a moistened cotton ball.
 - Students will observe the difference in the three seeds as they begin to swell and take up water. Students will record their observations. (Grasses, including corn, are monocots, and beans and squash are dicots. Students should observe that the corn seed has a single cotyledon while the bean and squash seeds each have two cotyledons.

Oklahoma Academic Standards

GRADE 3

Life Science: 1-1; 3-1; 4-3

GRADE 4

Life Science: 1-1

Three Sisters Gardening



Farmers throughout the New World, used a method of companion gardening we now know as “Three Sisters” gardening. The Three Sisters were squash, maize (corn), and climbing beans. The three crops benefit each other. The maize provides a structure for the beans to climb, eliminating the need for poles. The beans provide nitrogen that the other plants use, and the squash spreads along the ground, blocking the sunlight to keep weeds out. The squash leaves also act as a “living mulch,” creating a microclimate to retain moisture in the soil. The prickly hairs of the squash vine keep pests away. The three plants also provide a nutrient triangle. Each contributes some part of the essential vitamin mix that human beings need to survive.

Maize (*Zea mays*) was first domesticated in Mexico around 5000 BC. The practice spread to North

America by way of trade centers like Spiro, on the Arkansas River, in eastern Oklahoma. Since Spiro traded with people from the west and the east, the seeds could have reached them from either direction. Maize was used in the southwestern US by about 3200 years ago and in the eastern US about 2100 years ago. By 700 AD, maize was well established throughout North America. As maize spread, it became part of already-existing agricultural traditions, which included pumpkin (squash), and sunflowers.

Squash was first domesticated 8,000–10,000 years ago.

Pumpkin, a member of the squash family, was grown mostly for its seeds, which provided a portable source of protein. Dried pumpkin and other members of the squash family were useful as containers.

Beans were the last of the three sisters to be domesticated, probably in Mexico around 2,500 years ago.

The Three Sisters planting method is featured on the reverse of the 2009 US Sacagawea Native American dollar coin.



Oklahoma Ag in the Classroom is a program of the Oklahoma Cooperative Extension Service, the Oklahoma Department of Agriculture, Food and Forestry and the Oklahoma State Department of Education.