



Three Sisters Garden – Monsoon Planting

History

Sustainers of Life

To the Iroquois people, corn, beans, and squash are the Three Sisters, the physical and spiritual sustainers of life. The three vegetables composed the main food supply of the Iroquois. These life-supporting plants were given to the people when all three miraculously sprouted from the body of Sky Woman's daughter, granting the gift of agriculture to the Iroquois.

The Iroquois agricultural system was based on the hill-planting method. Iroquois women, who were responsible for farming, placed several kernels of corn in a hole. As the small seedlings began to grow, the farmers returned periodically to mound the soil around the young plants, ultimately creating a hill one foot high and two feet wide. The hills were arranged in rows about one step apart.

Iroquois women mixed their crops, using a system called "interplanting." Two or three weeks after the corn was planted, the women returned to plant bean seeds in the same hills. The beans contributed nitrogen to the soil, and the cornstalks served as bean poles. Between the rows, the farmers cultivated a low-growing crop such as squash or pumpkins, the leaves of which shaded the ground, preserving moisture and inhibiting weed growth.

The Arizona version!

Three Sisters Gardens Should be Ready by Monsoon Rains:

The three sisters - corn beans and squash - were the survival foods of the native peoples of Sonora. By early July, your three sisters garden pits should be dug and filled with good compost, seeds should be in the ground waiting for the rains, and you should have straw ready to cover the soil once the seeds have sprouted.

This concept is now known as companion planting. Putting plants near each other can actually help the plants to survive and grow well. This is the concept behind the Three Sisters: put corns and beans and squash together and they help each other.

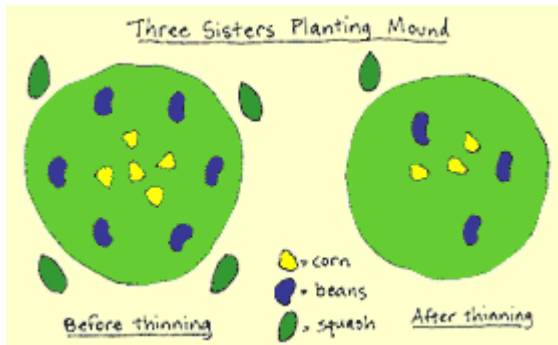
Soil Chemistry

Getting the right nutrients in the soil is essential to the success of any garden. These days we mostly rely on fertilizers to provide the right 'food' for plants. But through companion planting, you can provide proper nutrients from one plant to another through the soil they share.

In the three sisters, the beans, part of the legume family, take in unusable nitrogen from the air and produce excess, usable nitrogen to the soil for the corn and squash. But while beans are useful in many companion planting combinations, they are not good to plant around onions or garlic, which do not like the extra nitrogen

Doreen Pollack is the Garden Goddess and owner of Down 2 Earth Gardens, providing garden consultations and coaching. Join her for free gardening tips at monthly What to Do in Your Garden this Month workshops. To find a workshop near you, visit www.down2earthgardens.com or call 623.217.6038.

Creating a Three Sisters Garden for kids



Materials

soil preparation tools (e.g., spading forks, rakes)
measurement tools (rulers, yardsticks, or tape measures)
sticks (to mark mound locations)
seeds: corn, pole beans, winter squash or pumpkins

Creating the Garden

Each Native culture that grew the three feature guidelines for

sisters had a unique planting system. Here we one type of setup.



- 1. Plan and select a site.** You'll want to three sisters garden in late spring danger of frost has passed. Choose a direct sunshine for most of the day and access to water. students have determined their site's dimensions, challenge their three sisters garden on paper. They can use the layout below or research and try others.
- 2. Prepare the soil.** First, break up and rake the soil. Next, mound about 12 inches high and between 18 inches and 3 diameter. If you're in a dry area, flatten the top of the mound and make a shallow depression to keep water from running off. The number of mounds your students create depends on the size of your growing area. Mounds should be 3 to 4 feet apart in all directions.
- 3. Plant corn.** Soak four to seven corn seeds overnight and then plant them about 6 inches apart in the center of each mound. (You'll eventually thin to three or four seedlings.) Many Native people honor the tradition of giving thanks to the "Four Directions" by orienting the corn seeds to the north, south, east, and west. By doing the same, students can learn to use compasses and observe the sun's movements.
- 4. Plant beans and squash.** After a week or two, when the corn is at least 4 inches high, soak and then plant six pole bean seeds in a circle about 6 inches away from the corn. (You'll eventually thin to three or four bean seedlings.) At about the same time, plant four squash or pumpkin seeds next to the mound, about a foot away from the beans, eventually thinning to one. If you are planting a large area, you can also sow the squash in separate mounds (1 foot in diameter) between every few corn and bean mounds.
- 5. Consider other additions.** Consider planting other traditional crops, such as sunflowers or jerusalem artichokes (a tuberous perennial sunflower), around at the edge of the three sisters garden. Put them on the north side so they won't shade your other plants. Potatoes, sweet potatoes, and other native crops are often planted in nearby plots. (Some of the many other indigenous plants used by native North, South, and Central Americans include melon, tobacco, chili pepper, cotton, blueberry, wild rice, and hazelnuts.) Let your students' creative juices flow as they create a unique scarecrow; a number of Native culture's gardens incorporate these familiar figures.
- 6. Maintain your traditional garden.** As corn plants grow, weed gently around them and mound soil around the base of each stem for support. When the corn is knee-high and again when silks appear on the husks, "side-dress" by putting a high nitrogen fertilizer (such as aged manure or fish emulsion) on the soil surface near each plant. If beans aren't winding their way around the corn, youngsters can help by moving tendrils to the stalks. (Keen observers may notice a pattern in the direction in which the bean vines wind.) To allow room for corn and beans to grow, gently direct squash vines into walkways, garden edges, or between mounds. Once students observe young fruits, side-dress the squash plants with aged manure or compost. If you pinch off the tips of squash runners after several fruits have started to form, the plants will devote more energy to producing squash.

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Raising Three Sisters in Containers

If your outdoor growing space is limited, you can create a mini three sisters garden in an outdoor container, such as a barrel, or even in the classroom. Although students won't likely see the crops grow to maturity, especially indoors, they should be able to observe the pole beans twine around the corn and the large squash leaves form a mat. To simulate this planting system, use a large container with holes or gravel in the bottom and fill it with potting mix (and compost if you're growing outdoors). Follow the above instructions, but plant only 3 corn seeds (and thin to 1), 2 bean seeds, and 1 mini pumpkin seed. Place the container where it will receive at least six hours of sunlight (or 12 hours of grow lights) each day.

What to do in your garden in July

Seeds to plant with Summer rains

Amaranth
Armenian Cucumbers
Beans, bush, pole, pinto
Black-eyed Peas
Corn
Devil's Claw
Pumpkin
Squash - winter
Sun Flower
Apache Red Sugar Cane

Plant only palms

Start Tomatoes and Pepper by seed indoors for a fall crop to be planted in late August, early September.

CARE

Watch watering for herbs like lavender, rosemary, sages and thyme carefully. Although they enjoy the heat of our summers, they need water. But make sure they have good drainage as well, as their roots can rot in hot, wet soils. Also watch watering for penstemon, brittlebush and desert milkweed

Fertilizing – plants in post/containers need a water soluble fertilizer during the summer. Fertilize Hibiscus, red bird of paradise and crape myrtle. Fertilize Bermuda grass and St. Augustine.

NO PRUNING unless it is for broken branches or to thin a canopy of a tree.

Monsoon winds

- Hot and dry – will dry out gardens and pots quickly
- Stake young trees – use two poles so they can sway – it strengthens the trunk
- Watch for sunburn on all plants, especially trunks of newly planted trees. Wrap trunks, cover succulents, cactus if needed.

Table 1. COMPANION PLANTING CHART FOR HOME & MARKET GARDENING
(compiled from traditional literature on companion planting)

CROP	COMPANIONS	INCOMPATIBLE
Asparagus	Tomato, Parsley, Basil	
Beans	Most Vegetables & Herbs	
Beans, Bush	Irish Potato, Cucumber, Corn, Strawberry, Celery, Summer Savory	Onion
Beans, Pole	Corn, Summer Savory, Radish	Onion, Beets, Kohlrabi, Sunflower
Cabbage Family	Aromatic Herbs, Celery, Beets, Onion Family, Chamomile, Spinach, Chard	Dill, Strawberries, Pole Beans, Tomato
Carrots	English Pea, Lettuce, Rosemary, Onion Family, Sage, Tomato	Dill
Celery	Onion & Cabbage Families, Tomato, Bush Beans, Nasturtium	
Corn	Irish Potato, Beans, English Pea, Pumpkin, Cucumber, Squash	Tomato
Cucumber	Beans, Corn, English Pea, Sunflowers, Radish	Irish Potato, Aromatic Herbs
Eggplant	Beans, Marigold	
Lettuce	Carrot, Radish, Strawberry, Cucumber	
Onion Family	Beets, Carrot, Lettuce, Cabbage Family, Summer Savory	Beans, English Peas
Parsley	Tomato, Asparagus	
Pea, English	Carrots, Radish, Turnip, Cucumber, Corn, Beans	Onion Family, Gladiolus, Irish Potato
Potato, Irish	Beans, Corn, Cabbage Family, Marigolds, Horseradish	Pumpkin, Squash, Tomato, Cucumber, Sunflower
Pumpkins	Corn, Marigold	Irish Potato
Radish	English Pea, Nasturtium, Lettuce, Cucumber	Hyssop
Spinach	Strawberry, Fava Bean	
Squash	Nasturtium, Corn, Marigold	Irish Potato
Tomato	Onion Family, Nasturtium, Marigold, Asparagus, Carrot, Parsley, Cucumber	Irish Potato, Fennel, Cabbage Family
Turnip	English Pea	Irish Potato

<http://attra.ncat.org/attra-pub/complant.html#options>