The Three Sisters:

A Three Sisters Garden
This illustration is actually a photograph of a diorama found at the New York State Museum in Albany. The museum has a large long-term exhibition titled Native Peoples of New York. If you have the opportunity to visit this museum, don't miss it!

A diorama is a three dimensional model with life-like details. The exhibition focuses on life in a Mohawk village.
Choose one or more of the questions below. Your teacher will tell you how to complete the assignment.

1. Why are there tree trunks in the field?
2. How did the boy get up onto the platform?
3. Why is the boy on the platform?
4. Why are there gourds on the ground?
5. Does the corn seem the same as corn we grow in our fields?
6. How would you describe the scene in the diorama?
Design your own three sisters garden!

Make a design in this circular field using the Three Sisters garden pieces on the next page.

What do you like about your garden?  

__________________________________________  

__________________________________________  

__________________________________________
Three Sisters Garden Cut-outs

Use scissors to cut out the garden pieces. Use glue or tape to “plant” them in the garden on the previous page.
Here are two modern recipes for Three Sisters Soup!

Soup One Ingredients:
- Corn oil
- 4 chopped carrots
- 2 diced onions
- 3 diced potatoes
- 2 cloves garlic, minced
- 1 cup chopped green beans
- 2 cans of diced tomatoes
- 2 yellow or green summer squash, diced
- 1 diced green peppers
- 1 large can of hominy corn

Instructions:
1. In a large saucepan, sauté the onions, leeks, and garlic over medium heat in corn oil until they are brown.
2. Add the tomatoes and peppers, and cook for a minute over high heat.
3. Reduce heat to a simmer, and add hominy corn, carrots, and potatoes.
4. Add water to desired thickness.
5. Bring to a full boil, cover and turn heat down to medium-low.
6. Simmer slowly for two hours.
7. Add green beans, summer squash, and herbs during the last 20 minutes.

Soup Two Ingredients:
- 2 cups canned white or yellow hominy, drained
- 2 cups fresh green beans, trimmed and snapped
- 2 cups peeled and cubed butternut squash
- 1 1/2 cups diced peeled potatoes
- 5 cups water
- 1 1/2 tablespoons chicken bouillon granules
- 2 tablespoons butter, melted
- 2 tablespoons all-purpose flour
- 1/4 teaspoon pepper

Instructions:
1. place the hominy, green beans, squash, and potatoes into a pot, and pour in water and chicken bouillon.
2. Bring to a boil, then reduce heat to low, and simmer until vegetables are soft, about 10 minutes.
3. Blend flour into the butter, then stir into the soup. Increase heat to medium, and cook for 5 more minutes, or until soup thickens. Season with pepper, and serve.
Soup math...

Let’s pretend the first Three Sisters Soup recipe on the previous page makes enough soup to feed 8 people.

Directions: Read the sample story and solve the questions following it. You will be multiplying and dividing your way to cooking success!

The Dinner Party:

You decided to show off what you’ve learned about the Hau-de-no-sau-nee by making Soup Number One for 24 guests. But your recipe only makes enough soup for 8!

Instead of spending hours making each batch of soup, you decide to multiply the ingredients and make one big batch in your big cooking pot.

How many onions do you need now? ______

How many cloves of garlic do you need now? ______

How many potatoes do you need now? ______

Changing the recipe:

One of your friends wants the recipe, but only wants to make half of a batch. Can you change the recipe to serve 4, not 8?

How many carrots will they need? ______

How many green peppers will they need? ______

What about the can of corn? ______

Should they use half a can, look for a smaller can or use all of the larger can? The nice thing about vegetable soup is that you can usually change the amount of vegetables you put in it! (See how both recipes are a little different?)
Review
* In 1779, Sullivan’s Campaign moved through New York state, destroying the villages of enemy Hau-de-no-sau-nee.

* Modern-day Hau-de-no-sau-nee are do not always wear their traditional clothes. They use them for ceremonies, festivals, and other important occasions within their culture.

* “Iroquois” means “black snakes”, a name that is offensive to the Hau-de-no-sau-nee people.

* Some Hau-de-no-sau-nee lived in big longhouses. You can see pictures and models of them at some museums around New York.

* The people who live in New York state today eat many of the same foods that the Hau-de-no-sau-nee ate before the American Revolutionary War.

* There are many ways to use plants so that nothing goes to waste.

* The Three Sisters are corn, beans, and squash. They help each other grow when planted together.
Curriculum Connections

Tuning in to the Sisters’ Cycles

Invite your keen observers to tune in to and document, in their garden or science journals, the emerging plant parts and life cycle changes that occur in your three sisters garden. They may notice the corn tassels, the husks protecting the seeds, and the silks pushing out of the tops of the ears. What color do these turn as the fruits ripen? Which way do bean vines twine? How do they hold on? What types of flowers does each sister feature? Who visits them? What happens to flowers and where do fruits come from? What do they contain? Have small student groups create models, drawings, or a play depicting the unfolding life stories of the three sisters.

Growing Inquiries

As the three sisters grow indoors or out, consider challenging students to try to figure out just how each one grows up. Does growth occur from the top of the plant or from the base? Your young scientists might draw a dot on stems of corn and bean plants with a waterproof marker. Each week, they can use a ruler to measure the distance from the ground to the dot on each stem. (Since corn, a grass, grows from the bottom, the distance between the dot on the corn plant and the ground will increase over time. On bean plants, which grow from the tip, this distance should not change.)

Nutritious Lessons

Native people who grew and honored the three sisters were well aware that they were nutritionally rich and complementary. Have students research the nutritional value of each of the three sisters and the benefits of eating them in combination. They should discover that corn supplies carbohydrates and a variety of important amino acids. Beans have protein, including two essential amino acids that corn lacks. Squash contributes vitamin A. Squash seeds also contain quality fats that corn and beans lack. Encourage students to learn about some of the many ways — from grinding corn to making breads — in which different native cultures prepare and eat the three sisters. Cook some traditional meals using online recipes from The Three Sisters Cookbook.

Something Fishy?

Word has it that some Native cultures fertilized soil by burying a dead fish (or fish carcass) under each three sisters mound, just beneath the seeds. As the fish decomposed, it was said to provide...
nutrients to the growing plants. Ask students, *How might you test the effectiveness of this gardening lore?* They will likely want to compare mounds planted with and without a dead fish. Although you may want to allow them to pursue such an investigation, consider encouraging them to use dried fish bones (from a fish store) or liquid fish emulsion fertilizer, which are less likely to attract unwanted critters.

**Folklore and Rituals**

Explore the role and importance of the three sisters in Native cultures through stories, celebrations, and art. Native stories often use nature to teach about relationships between people and between people and the natural world. After hearing or reading authentic Native stories, students might want to create their own tales or plays based on their growing experiences. Planting rituals and harvest celebrations, which youngsters enjoy, reveal even more about the connections people had to the three sisters. Your class might also search for artistic representations of any or all of the crops in the art, music, clothing, or housing decorations of Native cultures under study. The books on the [Resources](#) page feature excellent historical information, stories, and activity suggestions.

### An A-Maize-ing Crop

7,000 to 10,000 years ago, what we call corn (and much of the world calls *maize*) was merely a wild grass. Over time, Native people systematically collected seeds from the plants best suited for eating, and corn became, well, more corn-like! Today we have colorful flint corn (often called Indian corn), which is mainly used for feed; sweet corn; dent corn; flour corn; and popcorn. (Popcorn is a flint corn with small hard kernels. When they are heated, natural moisture inside turns to steam. The trapped steam builds up pressure and the kernel explodes to reveal the fluffy air-filled endosperm.)

Nearly 20 percent of the world's food calories come from corn, but it also enriches our lives in a host of other ways. Consider challenging your students to scour their kitchens and conduct research to uncover some of the products we reap from corn. Cornflakes may be obvious, but consider some of these other corn-based items: corn oil, corn syrup, fuel, fertilizer, plastics, cosmetics, and alcohol.
For Teachers and Parents:

Some scholars have a theory that human civilization started somewhere in Mesopotamia (the Middle East) or Africa. The early humans spread from there into Europe and Asia. Some eventually traveled over the once-above-water land bridge between Russia and Alaska and from there, moved down into North America, Central America, and South America.

The Haudenosaunee, or Iroquois, Confederacy finished forming in 1142, the Senecas being the last to ratify the constitution. The Haudenosaunee Confederacy included the Onondagas, Senecas, Cayuga, Oneida, and Mohawks. The Tuscarora fled, from the European colonists in North Carolina, to New York seeking refuge in 1720. They became non-voting members within the confederacy.

The arrival of the Europeans eventually led to discord between the Haudenosaunee and the new settlers. Neighboring settlements sometimes battled against the Native Americans. Competing colonial powers, the French and British, pitted various Native American nations against each other in the struggle over land claims.

When the American Revolution rolled around, the Haudenosaunee were divided. The majority of the nation allied themselves with the British while the Oneidas and Tuscaroras sided with the American colonists.

“The Mohawk and the Cayuga, who were strong allies of the British, today live on reservations in Ontario, and most of the remaining Iroquois, except for the Oneida who live in Wisconsin, are in New York. The Iroquois in Canada and in the United States are either Christians or followers of Handsome Lake, a Seneca prophet of the 18th century who was influenced by the Quakers. The total number of Iroquois in the United States and Canada is around 29,000.” - http://www.nativeamericans.com/Iroquois.htm

The Three Sisters are common vegetable crops to many Native American tribes, not just the Haudenosaunee. Corn, beans and squash grow well together, and benefit each other. They also provide foods when freshly picked or store well when dry. A Three Sisters garden is a great way to introduce gardening to your students.

There doesn’t appear to be one version of the Three Sisters story in Haudenosaunee folklore. It might be assumed that tribes and nations had their own stories which the passed on in the oral tradition. The story featured in the student lesson book was adapted from multiple stories from Haudenosaunee culture.

More information on teaching Native Americans as not only a people of the past but of today, can be found in the interesting web article included in Lesson Supplements at the back of this teacher’s guide. Also, ideas for extension activities are featured in Lesson Supplements.
Pages 1 and 2 The New York State Museum in Albany offers a very educational setting of dioramas, artifacts and a walk through replica of a longhouse. This diorama represents Mohawks farming. Notice how tall the corn was! Peas are a vining crop and grow up the corn stalk, while squash vine along the ground, keeping it cooler and moist. Farmland was cleared by fired and ax, therefore, tree stumps were common in the 'corn field.' In this diorama, they are shown used as a observational tower. A young member of the village watches for intruders and animals. Just as today, deer, raccoon and other animals could ruin a vegetable crop! Dried and hollowed squash plants could become water jugs such as the gourds shown in the shadow of the watch tower. Modern-day corn has been bred for taste and appearance. It is believed that the corn raised in centuries ago was commonly 10 feet tall, much taller than any of our sweet corn, and most of our field corn today. Encourage students to answer one or more of the questions in written form.

Page 3 Design Your Own Three Sisters Garden
This page should be completed individually. The cut-outs are available on the next page. Students should understand from the story that the three plants must be grown together in mounds. Each cut-out represents one mound with all of the three sisters growing out of it. Encourage students to be creative with their layouts, like using spirals, making a smiley face, or spelling a word with the arrangement of the cut-outs.

Page 4 Three Sisters Garden Cut-Outs
Each cut-out represents one mound with the three sisters growing out of it. The backside of this page (student page 12) is not an activity page - for convenience when printing duplex.

Page 5 Three Sisters Soup
These recipes are examples of ways to use corn, beans and squash to make tasty soups. Perhaps one can be used in class, or created at home and brought in as a treat while working through this lesson. Math questions based on the first recipe are on the following page. (StLess_threeSisters_SoupRecipe.pdf)
Soup math...

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How many onions do you need now? ________ 3 x 2 onions = 6
How many cloves of garlic do you need now? ________ 3 x 2 cloves = 6
How many potatoes do you need now? ________ 3 x 3 potatoes = 9

Changing the recipe:
One of your friends wants the recipe, but only wants to make half of a batch. Can you change the recipe to serve 4, not 8?

2 instead of 4

How many carrots will they need? _____ 1/2 instead of 1
How many green peppers will they need? _____
What about the can of corn? ______

use half the can, or...
use all of it!

Should they use half a can, look for a smaller can or use all of the larger can? The nice thing about vegetable soup is that you can usually change the amount of vegetables you put in it! (See how both recipes are a little different?)

This page may be completed individually or as a class. The questions are based on the cooking measurements in the first Three Sisters soup recipe on the previous page.