

Lenni-Lenape (Delaware) Indians' History, Culture and Food

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Overview

The Lenni-Lenape, the original people of the Philadelphia region, are the subjects of this multidisciplinary unit. How they lived in the distant past and how and where they live today are large questions to be treated. Specifically students will learn the history and culture of these original people of Philadelphia, but will then focus on food. Students will plant corn, beans and pumpkins in April. They will tend the crops through the summer and then harvest in the fall of the following school year. The students will learn what tools and techniques were implemented by the Indians. At harvest the students will prepare to consume their bounty following recipes from 300 years ago. The teacher will keep a folder for each student containing research and notes over the summer, as to be ready to continue in the fall. Since the unit will cover three broad topics, history, culture, and the growing of food, it is expected that the unit will cover six forty-five minute lessons in the spring and six in the fall.

Rationale

J. W. Catharine Elementary School K-5 is located in the Southwest region of Philadelphia, PA. The student body is primarily African American, but there are students from Asia, Central America, the Caribbean and other places; there is also a small population of Caucasian students. There have been problems in the neighborhood with “immigrants” not being welcomed. By having the students learn that we are ALL immigrants, except for the Indians, better relationships might be established. The Lenape’s were here when the Swedes started to settle in the now Philadelphia area. William Penn also found the Lenape’s as the natives to deal with when he established Philadelphia. The students should have an understanding that the Indians were not treated fairly as more settlers and more land was needed in the growth of Philadelphia and Pennsylvania. The students would also find that the history books were mostly written by the “white man” and that all information may not be as the Lenape would have wanted.

The School District of Philadelphia, promotes healthy eating in breakfast and lunch selections and by other programs offered to teachers for lessons in the classroom. Our school participates in EAT.RIGHT.NOW, a nutrition education program. The students are very interested in anything that directly touches their lives. Therefore, a unit on growing, harvesting and eating food consumed by Native Americans, which includes

foods that are still eaten today, would pique their interest.

I think that the students would be surprised to learn that growing corn, beans and pumpkins together was agriculturally a sound practice by the Indians. The fourth grade core curriculum has the students engaging in seed germination; the classes would germinate the corn, bean and pumpkin seeds in class. The fifth grade core curriculum has the students study solar energy for the first six weeks, so as the plants continue to grow the sun's effect could be investigated.

Historical Background

The Delaware River was named after Lord de la Warr, the governor of the Jamestown colony. Therefore, the natives who lived along the river were called Delaware. The natives actually called themselves Lenape (len-NAH-pay) which means "the People". The Lenape still do not accept the name assigned to them, Delaware, by white settlers. Their spoken language was part of the Algonquian language family. Their ancestors were among the first Indians to come in contact with the Europeans (Dutch, English, and Swedes) in the early 1600s. Other tribes called them the "Grandfather" tribe because they were respected by other tribes as peacemakers who served to settle disputes among rival tribes. As warriors they could be fierce, but chose to be peaceful towards other tribes and the Europeans.¹

The early treaties and land sales that the Lenape signed were not really sales, as the Lenape didn't think that they owned the land. They felt that the land belonged to the Creator and was theirs to use to shelter and feed their people. The lack of a common language and understanding of cultures led the Europeans to think they were buying the land. The Lenape (Delaware) felt they were offering to share and help these tired people after a long journey to survive in a new land. The trinkets that were given would never have been enough to really buy the land.²

When the Swedes arrived in the Delaware Valley in 1638, they referred to the whole area of eastern Pennsylvania, southeastern New York State, New Jersey, western Long Island and Northern Delaware, as "Lenapehocking" or "The Land of the Lenape." The Lenape were willing to sell some of their land to the Swedish settlers and supplied them with maize, fish, venison, and some furs.³

Relations between the Swedish settlers and the Native Americans were friendly in considerable contrast to those between the Lenape and other European settlers. The colonists of New Sweden avoided massacres. Amenable relations continued for the duration of Swedish rule. Swedish ministers provided translations and transliterations of Luther's Catechism into the Lenape dialect; but they did not try to convert as strongly as the Spanish.⁴

In time, however, the trading post and colony of New Sweden became ripe for a take over by the Dutch. In the late 1650's, the colony was absorbed by the Dutch both commercially and administratively. However, in the 1680's the British under William Penn took final control of the areas of New Sweden that fell within Penn's charter.⁵

Penn desired to lay out a city at a location the Indians called Coaquannock, the area between the Schuylkill and Delaware Rivers. He named it Philadelphia, from the Greek for City of Brotherly Love. Penn's vision was a city of 10, 000 acres but only 1,200 acres was used as it was mapped. The planning went beyond the city limits, which he called "a green country town," with large farms and manors to the North and the West.⁶

Penn made treaties with the Indians, compensating them for land which was his by grant from the King of England. Penn wrote of a land treaty that, "When the purchase was agreed great promises passed between us of kindness and good neighborhood, and that the Indians and English must live in love as long as the sun gave light."

Tradition claims that the Great Treaty to establish a league of friendship with the Indians was made under the elm tree at Shackamaxon, the Indians' "place of sachemakers or kings," in that part of Philadelphia called Kensington in 1682. It was of the Great Treaty that Voltaire wrote that it was "the only treaty between these people and the Indians that was not sworn to and not broken." The wampum belt given to Penn by the Indians symbolized the pledge of friendship.⁷

Benjamin West's popular historical painting was based on the Treaty which became the classic picture of peace. Penn, his Quakers and the Indians friendly and fair interactions contributed to the continual peace between these peoples. During the fifty years that followed, Penn's Province of Pennsylvania prospered as the youngest of the American colonies, and rose rapidly to the forefront of this new land.⁸

In 1737, the Walking Purchase land swindle took place. William Penn had returned to England leaving his sons in charge. The sons needing money to pay off debts wanted more Indian land to sell. They used an old draft of a deed that was never signed to trick the Lenape to agree to the walk. The document had stated that the Indians would give to Penn the land that could be covered in a day and a half walk. The Indians thought that the whites would take the walk on a path along the Delaware River and at a pace that would include several rest stops. However, the Penns had a straight path cleared ahead of time and hired three fast runners. Even though only one runner was able to complete the trip, he covered fifty-five miles and thus 1200 square miles was taken from the Indians. The Indians did complain, but felt that honor required them to accept the deal.⁹

The English continued to take more and more land with paper agreements. As with the Walking Purchase, the Indians could not always read the documents fully. The Indians were pushed aside, eliminated and at times divided to conquer. Some of the Delawares in moving out of the Philadelphia area, were forced to join with the Iroquois and became part of The Six Nations that was formed at this time. There were other Delawares that did try to fight for land in the western part of Pennsylvania. The French and Indian War that started in 1754, found Delawares fighting Delawares. The British, trying to continue to have the support of the Indians that were against the French, had established a Northern and Southern Indian Department. Even though The French and Indian War ended in 1759, fighting continued over the years in various parts of the country involving

Indians and British settlers. Our War of Independence which began in 1775 had both the colonists and the British trying to have the cooperation of the Indians including the Delawares (Lenape).¹⁰

The Delaware signed the first Indian treaty with the newly formed United States government on September 17, 1778. The Continental Congress had this treaty signed with the Delawares as between two sovereign nations. The British had signed a treaty with the Six Nations of the Iroquois, but in 1784 the new United States Congress sent out commissioners to sign a separate peace treaty with the Six Nations thus overriding any previous treaties with England. In the year 1871, by the Act of March 3, all treaties were null and void and the Indians were placed under the protection of the United States.¹¹

Nevertheless, through war and peace, the native peoples of Southeastern Pennsylvania had to continue to give up their lands and move westward (first to Ohio, then to Indiana, Missouri, Kansas and finally, Indian Territory, now Oklahoma). The Delaware Tribal Headquarters is now in Oklahoma, where Delaware Indians live on federally recognized tribal land. But in Pennsylvania, despite an increase in the numbers of residents claiming American Indian background, there are no government recognized tribes or land in the state. There are several people of native heritage living in southeastern Pennsylvania.¹²

White Eagle, 73, a former Perkins, Oklahoma, police chief who now lives in Bensalem and his wife Wahupa will speak at schools and libraries. They tell stories and play music and show children how to grind corn and to play American Indian games. They want to keep the culture alive and sell arts and crafts at their home on the Neshaminy Creek. White Eagle was head of the Eagle Clan Native American Intertribal Group, a nine year old education organization that had to disband in January 2006 because of lack of funds.¹³

Another group the United American Indians of the Delaware Valley also has had financial concerns. The group was able to offer help in getting education and training for its members. George Hines whose heritage is Apache is a member and works at Apache Auto Service in West Philadelphia.¹⁴

The Delaware Nation of Oklahoma did file a suit in January 2004, based on the idea that their ancestors were cheated out of 315 acres of land in Northampton County. The case was dismissed in late 2004 by a U.S. district court in Philadelphia.¹⁵

Jim Beer, spokesperson for The Lenape Nation, explained the group was formed about ten years ago as a nonprofit organization and has about 200 members. The group's purpose, he said, is "to educate residents of Pennsylvania about the only indigenous history of the state, which is Lenape history." A house painter and musician, Beer, 35, said the organization tries to make people "understand the perceptions of the ancestors," particularly about the natural environment. "Those perceptions create a healthy, sustainable way of living." In lecturing about Lenape history and the environment, "part of the work we're doing is reaching out to make connections," Beer added, "It's a time of revitalization for native communities." In conversation with Jim Beer, I learned that the

group had been given a farm and they were planning on growing corn, beans and pumpkins.¹⁶

Today, the Lenape hold Stomp Dances throughout the year. These social dances are for the joy of dancing and time is kept on a water-drum. Pahsaheman is the Lenape football game that is sometimes played at the Stomp Dances. Pow-wows are dances when the traditional Indian clothing is worn; again the sound of a drum is heard with the voices of singers. The Lenape do practice other ancient customs in their homes, but many are fading away as they continue to live in a modern society.¹⁷

Culture of the Lenni-Lenape

When the Europeans came, the Lenape were at the stage of development that archaeologists refer to as the Woodland Epoch. Lenapes were found to live in towns, producing good pottery, dressed in leather garments that were soft and beautifully decorated. Their carving of ornaments was artistic as was the weaving of feather blankets. They had singing and dancing to accompany their imaginative religious ritual. The Lenapes had in place a system of social restraints that showed them to be of a gentle nature and a desire to live in a calm manner with one another.¹⁸

Penn's description of the Natives in look and language is interesting given today's political correctness as this excerpt from a letter written in 1683 demonstrates:

For their Persons, they are generally tall, straight, well built, and of singular Proportion; they tread strong and clever, and mostly walk with a lofty Chin: of Complexion, Black, but by design, as the Gypsies in England: They grease themselves with Bears-fat clarified, and using no defence against Sun or Weather, their skins must needs be swarthy; Their Eye is little and black, not unlike a straight-look't Jew. The thick Lip and flat Nose, so frequent with the East-Indians and Blacks, are not common to them; for I have seen as comely European-like faces among them both, as on your side of the Sea; and truly an Italian Complexion hath not much more of the White, and the Noses of several of them have as much of the Roman.

Their Language is lofty, yet narrow, but like Hebrew; in Signification full, like Short-hand in writing; one word serveth in the place of three, and the rest are supplied by the Understanding of the Hearer: Imperfect in their Tenses, wanting in their Moods, Participles, Adverbs, Conjunctions, Interjections: I have made it my business to understand it, that I might not want an Interpreter on any occasion: And I must say, that I know not a Language spoken in Europe, that hath words of more sweetness or greatness, in Accent and Emphasis.¹⁹

Based on Penn's description, the use of "Redskin" is definitely a misnomer.²⁰

Archeological findings indicate that the Lenape subsisted by shellfish-gathering, hunting, fishing, and foraging for wild plant foods, supplemented by hoe gardening of corn, beans, and squash.²¹

They used stone tools, such as axes, celts, adzes and knives which were chipped and flaked from sandstone, granite and other stones available in the area or from soapstone obtained from distant quarries. These tools were used in daily tasks, such as making clothing, preparing meals, tanning hides, carving dugout canoes, and producing other flaked implements.²²

During the summers, they cleared small tracts usually near water where the women planted corn, squash and beans and the men fished and hunted. In the colder months the families separated and moved into the forest to hunt deer. A local community had one or two villages and each had about six houses. The Lenapes looked for water, good drainage and warmth for winter when choosing a site for a new village. The corn plants took nutrients out of the soil, so fresh land would be needed.²³ They cleared the fields by the slash-and-burn technique, cutting down the larger trees, burning over the area, and planting crops between the stumps.²⁴

In February, the sap began to run and those near maple trees would select sites for sugar-boiling camps. The village, during the day, was quiet except for the sound of a howl from an Indian dog, which is now extinct or the sound of corn pounding in wooden mortars. The sound of voices in conversation or story telling would be heard in the evenings. The soft sound of the “social dance,” “stomping” could also be enjoyed on occasion during gatherings at night.²⁵

The men wore a breechcloth (similar to our bathing trunks), a belt and moccasins. The belt was usually from deerskin or wampum (shell beads) and often was decorated. A length of soft deerskin was passed under the body between the legs, brought up inside the belt, and folded out over to hang down, front and back, like a small apron. Moccasins were of laced deerskin and decorated with porcupine quills and wampum. In cooler weather other garments were needed. Robes could be made from deer, bear, beaver, or raccoon skins. Feathers from goose or turkey could be woven into a robe. The robe was usually thrown over the left shoulder to keep the right arm free. The robe was worn with the fur next to the skin in the colder weather. When sewing the skins to make a long garment, the hair was all set in one way, so that rain would run off. A deerskin jacket could be worn with or without a robe and reached below the knee. Thongs fastened leggings of fringed buckskin to the belt and reached from the above the knee to the ankle. Women’s garments included a skirt from deerskin folded over the belt and falling to the knees. Practically no clothing was worn by young children. Clothing and personal objects were ornamented with floral designs, fashioned originally with porcupine quills and later, after the white man’s arrival, with trade beads as well.²⁶

Indian males plucked out or shaved their hair except for a long strip that was allowed to grow and stand up from the forehead to the back of the neck. Some men also grew a “scalplock” that hung down at the back of the head to taunt an enemy.²⁷ Women let their hair grow long and instead of a plait, they would fold and tie it round with wampum or deerskin.²⁸

Facial hair was sparse on men, so a beard was rare. To have a clean face for painting, they plucked any hair on the face. A pair of mussel shells which had been sharpened on a stone worked well to pull out the hair. They kept themselves clean with a daily swim in the stream. There was a sweat lodge for those too sick or elderly to swim.²⁹

The Lenape men wore one or two feathers in the hair, never the circlet often seen as a war bonnet. Feathers were not worn by the women. Both men and women painted their faces. Every color had a meaning: white-peace, black-evil, grief or death. Red could be for decoration, or as war paint. Paint came from wood ash or black shale or burnt ochre. Tattooing was also acceptable on the face as well as the body. The Lenapes would cut their ear lobes to attach pearls, feathers, flowers and other ornaments.³⁰

The Lenape house was of a beehive shape made of mats or tree bark for the winter and their summer home would have a peaked-roof made of bark. There would be one fire in the center. The small cabin like log house was used as a dwelling in the eighteenth century. The longhouse would have been used for gatherings within the village.³¹

The Lenape men because of physical strength would be responsible for the felling of trees and hunting, while the women took care of the children and planting of the crops. The men made the fish dam and caught fish in a basket. He made the canoes, war clubs, bows and arrows. The woman owned the house, contents and fields attached. In a divorce case she kept the children. The women were highly respected and their opinions counted in matters of war and peace.³²

Because corn was a main crop the Lenape had twelve different ways of using the husk and kernels. Among them letting unripe corn swell in boiling water, drying it and laying it by for later use as soup or salad.³³

We owe the Indian almost everything, including our country. But most important of all, the whole world’s most useful and essential foods have been received from the Indian. A few of the foods, unknown to the rest of the world before the coming of the white man to our shores, include: maize (corn), hominy, white potatoes, buckwheat, pumpkin, squashes, many kinds of melons and fruit, sunflower seeds, tomatoes, lima and string beans, berries, nuts, herbs, spices, peanuts, wild rice, peppers, onions, maple syrup, and the wild turkey.

The tender leaves and buds of the milk-weed and the fronds of ferns were eaten as

greens by the Indians. The roots and seeds of the yellow pond lily were a special treat. Maple syrup was often used as a substitute for salt. Water was the most common drink, although many drinks were made from berry juice. Indians also drank tea made with sassafras roots, sweet birch twigs, winter green, and leaves of young strawberry plants. Besides the foods that the Indian raised, there were many large game animals such as squirrels, opossums, ground hogs, and also wild turkeys, quail, pheasants, and many kinds of fish. Salt was obtained from the salt lakes. Fish filled the streams and lakes and were taken with hook, net, or spear. Along the seacoast and certain streams shellfish were often an important element of the diet.³⁴

Objectives

I want the students to have a good understanding of the history and culture of the Lenape. The classes will accomplish this through the Lenape web site and books, graphics and a visit by a Lenape Indian to the classes. The students should also be sensitive to the notion that as a nation of immigrants, the only native born are the misnamed Indians. During a lesson they will practice the Lenape language from the web site. The students will try to use tools similar as to those the Lenape would use. This activity should enforce the concept of how hard they had to work to produce their food.

While doing research, they should find what foods we eat today that the Indians would have eaten. The students will plant a plot of ground, after researching how much land they need, with corn, beans and pumpkins. The students would learn as the historian Daniel Richter has written, how “the corn stalks provide a natural pole around which bean vines could twine, meanwhile, pumpkins spread their broad leafed vines to crowd out weeds and shade the ground, thus retarding evaporation under the hot sun. The trinity of corn, bean and pumpkins thrived on an agricultural process of impressive simplicity.”³⁵

Strategies

Before doing any research the students would first brainstorm using KWL (what you know, what you want to know, and what you want to learn). Skills on doing research on the Internet and using encyclopedias as well as other sources, newspapers, and interviews, would be developed. The students would design a scientific inquiry (problem, hypothesis, materials, procedure, result and conclusion) on planting, growing and harvesting the corn, beans and pumpkins. There are so many variables involved that all plants may not grow as well as others. As stated previously, the seeds would be germinated in the classrooms before planting. Charts on the growth progress of each of the three plants would be kept. Graphs of the progress of growth would be completed as the unit progressed. Before harvest time, the students would decide on recipes that they would like to make and eat.

Classroom Activities

There are four fourth grade classes and four fifth grade classes. Each group would participate in all of the forty-five minute lessons. Since the planting, tending and harvesting of the gardens will take place outside, the weather will have to be taken into

account. It is hoped that between the first and second lesson that Jim Beer, a Lenape Indian, can come to visit the classes. I will also try to plan to class trips, one to Linvilla Orchards and one to the Swedish Museum.

Lesson One

Objective: To introduction the unit and to pique the students' interest in learning about the Lenape's and to begin to know these people.

Activities: Students, you are in a Time Machine that has traveled back 300 years to the area you know as Southwest Philadelphia. Who is here? What do they look like? What does it look like? What are the people doing? Where are they now? During the brainstorming and KWL chart, the students will divide into groups of five to look at graphics, visit the Lenape web site, listen to language tapes, read newspaper accounts, and look at books. The groups will then come back as a class and report what they learned and see what questions we can answer.

Lesson Two

Objective: Have the students continue to learn about the Lenape's culture and language, but to start to focus on their lives as growers of their food.

Activities: Those groups that did not visit the Lenape web site or listen to the language tapes would do so. The students would try to write sentences using the Lenape language (after each group has had time to write sentences, the class will try to interpret the sentences). Language can be a problem when different cultures meet, so the students should gain insight into the struggles between the Lenape and settlers. The students would start to discuss foods they like to eat, foods they found that the Lenape ate and start the scientific inquiry. The students will draft a science inquiry flow chart with the question that we will be answering (will the class be able to grow the corn, beans and pumpkins), the theory (if we follow the directions planting and tending, we should have crops to harvest), the experiment (we are trying this for the first time and could have problems), taking measurements while growing and observing, and using our senses every step of the way.

Lesson Three

Objective: Have the students begin to plan their gardens and what will be needed to tend them as the plants grow.

Activities: The students will again work in groups of five listing the steps for each: preparing the land including tools, planting the seeds including the different needs of the corn, beans and pumpkins, how the plants should be tended including water supply and tools, what needs to be done over the summer and by who, what needs to be done ahead of time to be ready for harvesting in the fall, and start the seeds in containers for germination. Below are the directions for planting, tending, and harvesting the corn, beans and pumpkins.

Pumpkins:

1. Start seeds indoors about three weeks before the last expected frost. If your growing season is long and warm, sow seeds directly in the garden when the soil temperature has reached 60 degrees F.
2. Choose a site that gets full sun and has soil with a pH of 6.0 to 6.8. Pumpkins need light, very rich soil that drains well. Dig in large amounts of compost and well-cured manure to ensure the right combination.
3. Till your pumpkin patch deep and wide: Both roots and vines can spread as far as 15 feet in all directions, but these can be pruned back.
4. Harden off the seedlings, and transfer them to the garden when all danger of frost has passed. Plant them in hills, setting them at least as deep as they were in the pots. Spacing varies with the variety (check the seed packet), but in general allow at least 5 feet between plants in each direction.
5. Mulch with organic matter once plants are established to conserve moisture and deter weeds, and use cloches or floating row covers to protect young plants from chilly winds.
6. Make sure the plants get 1 to 2 inches of water a week, especially when they're blooming and setting fruit.
7. Feed plants with compost tea or seaweed extract every two to three weeks.
8. Pinch vines back to limit their growth once fruits appear.
9. Rotate pumpkins once in a while to keep them symmetrical, but take care to move them only a little at a time to avoid breaking the brittle vines.
10. Place boards under large pumpkins to keep them from rotting.
11. Harvest orange pumpkins after the vines have shriveled and died, but before the first hard freeze. Cut white varieties when their skins are still streaked with green (if they're allowed to ripen outdoors, their shells turn pale yellow)

Beans:

1. Choose a site in full sun (partial afternoon shade in very hot climates) that has well-drained soil with a pH of 5.5 to 6.5.
2. Add organic matter that is high in phosphorus and potassium rather than nitrogen. Beans, such as peas, capture nitrogen from the air.
3. Sow seeds outdoors after all threat of frost has passed and the soil temperature has reached at least 55 degrees F. Seeds should be an inch deep and two to three inches apart in rows three to four feet apart.
4. Install supports for pole beans when you plant the seeds so you won't have to disturb roots later on.
5. Thin when the seedlings emerge so that bush varieties are five to six inches apart, pole beans six to eight inches. In humid climates, increase the distance between plants to allow good air circulation.
6. Make sure beans get about an inch of water a week, a little more when pods are developing. Don't overwater; though-too much water causes more damage than too little.
7. Mulch with compost when plants have developed their second set of leaves, and give them a feeding or two of compost tea to promote heavy yields.

8. Pick snap beans when they're young and tender, before you notice the seeds swelling. Harvest shell beans when the pods are plump but before they start turning brown. Leave dry beans on the plant until the seeds are hard and the pods dry.
9. Compost plants or till them under when they've stopped producing pods; you'll avoid attracting bean beetles and other unwanted multilegged critters.

Corn

1. Choose a site that gets full sun and has soil with a pH of 6.0 to 6.8. Corn needs soil that's simultaneously rich, moisture-retentive and well-draining; digging in plenty of compost and well-cured manure will ensure the magic combination.
2. Plant seedlings outdoors at least a week after the last frost and when the soil temperature has reached at least 55 degrees F (65 degrees for super sweet varieties).
3. Sow seeds 1 to ½ inch deep, 4 to 6 inches apart. For best results, plant in hills, and several plants to a hill and the hills grouped in clusters rather than long rows.
4. Thin plants to a foot apart when they're 3 to 4 inches tall, and mulch when the ground has warmed to deter weeds and retain moisture.
5. Make sure plants get at least an inch of water a week, but never water from above – it can wash away pollen.
6. Feed plants with a balanced liquid organic fertilizer three times; when they reach 10 inches, then 18 inches, and when tassels appear.
7. Harvest when husks are dark green, silks are dry and brown but still supple, and full-size kernels reach to the top of the ear. For most varieties, that will be about 20 days after the silks appear.

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Annotated Bibliography for Student's

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Resources

Linvilla Orchards
137 West Knowlton Road
Media, Pa 19063
610-876-7116
www.Linvilla.com

American Swedish Historical Museum
1900 Pattison Avenue
Philadelphia, PA 19145-5901
215-389-1776
www.americanswedish.org
info@americanswedish.org

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http://www.ehow.com/how_1997_grow-corn.html. May 12, 2006 Instructions on how to plant and grow corn

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Materials

Lenape Language Lessons (in two sets)
Delaware Tribal Gift Shop
220 N.W. Virginia
Bartlesville, OK 74003
918-336-5272
e-mail Lenape@cowboy.net
Cost is \$15.00 per set plus \$4.00 for mailing

For germination: containers for the beans, corn and pumpkin seeds to start to grow before planting

Before planting: ground needs to be cleared with strong rakes and hoes to pull grass and weeds away. The dirt needs to be turned with shovels and fertilized, for the pumpkins use seaweed extract too.

When planting: cover with mulch, water with watering cans or hose, stake out the plants.

Tending plants: pruners to cut back, especially if the pumpkins spread too wide, continue to water and fertilize.

Appendices

The Philadelphia Standards that align with the Pennsylvania State Standards

Grade Four Science

3.2.4 Inquiry and Design

C. Recognize and use elements of scientific inquiry to solve problems.

3.3.4 Biological Sciences

B. Know that living things are made up of parts that have specific functions.

D. Identify changes in living things over time.

4.4.4 Agriculture and Society

A. Know the importance of agriculture to humans.

C. Know that food and fiber originate from plants and animals.

4.6.4. Ecosystems and their Interactions

C. Identify how ecosystems change over time.

Grade Five Science

3.2.7 Inquiry and Design

B. Apply process knowledge to make and interpret observations.

3.3.7. Biological Sciences

C. Know that every organism has a set of genetic instructions that determines its inherited traits.

4.4.7 Agriculture and Society

A. Explain society's standard of living in relation to agriculture.

C. Explain agricultural systems' use of natural and human resources.

4.6.7 Ecosystems and their Interactions

C. Explain how ecosystems change over time.

¹The Delaware (Lenape) Tribe of Indians: Homepage from the Internet

<http://www.delawaretribeofindians.nsn.us> April 3, 2006

² Ibid

³Zoriana E. Siokalo, *Before Penn: Swedish Colonists in the Land of the Lenape*, 1988, p. 17

⁴Siokalo, p. 27

⁵Siokalo, p. 28

⁶ Welcome Society of Pennsylvania, *Your Friend William Penn*, 1944, p. 7

⁷ Welcome, pgs. 12-13

⁸ Welcome, pgs. 15-17

⁹ The Delaware (Lenape): Homepage from the Internet, Walking Purchase

¹⁰ Alvin M. Joseph, *The Indian Heritage of America*, 1968, pgs. 311-312

¹¹ Alice Marriott and Carol K. Rachlin, *American Epic The Story of the American Indian*, 1969, pgs. 131-132

¹² Walter F. Naedele, "In Pa., urban Indian life is vanishing fast", 2006 p.1

¹³ Ibid, p.2

¹⁴ Ibid

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- ¹⁵ Ibid
- ¹⁶ Ibid
- ¹⁷ The Delaware (Lenape): Homepage from the Internet, Dances, Music and Games
- ¹⁸ Paul A.W. Wallace, *Indians in Pennsylvania*, 1991, p.7
- ¹⁹ Albert Cook Myers, *William Penn, His Own Account of the Delaware Indians*, 1937, pgs. 25-27
- ²⁰ Wallace, p. 21
- ²¹ Siokalo, p. 29
- ²² Ibid
- ²³ Wallace, pgs. 27-28
- ²⁴ Joseph, p. 92
- ²⁵ Wallace, p. 28
- ²⁶ Wallace, p. 21
- ²⁷ Joseph, p. 92
- ²⁸ Wallace, p. 22
- ²⁹ Wallace, pgs. 22-23
- ³⁰ Wallace, pgs. 23-26
- ³¹ Wallace, p. 29
- ³² Wallace, p. 31
- ³³ Wallace, p. 34-35
- ³⁴ Joseph, p. 91
- ³⁵ Randall M. Miller and William Pencak, editors, *Pennsylvania a History of the Commonwealth*, 2002, Chapter One, "The First Pennsylvanians", p.17