

6th Grade – Nebraska in the World – Lesson 1

Grade 6	<p>Theme: Nebraska in the World</p> <p>Lesson Title: Prehistoric Farm Families in Nebraska</p> <p>Literacy Strategies: Close reading, graphic organizers, note-making, oral discussions, quick writes, structured writing process</p>
Objectives / Learning Targets	I can interpret primary historical evidence by using excavations, maps, artifact images, and collected data.
Background Information	<p><i>The Patterson site is where archaeologists have found many historical artifacts from the "Farm Families" of the Central Plains. There were hundreds of ruins and artifacts, however, they had no written language. During this lesson, you will be studying the information and artifacts that were left behind during the ancient times (1000-1400 A.C.E.).</i></p> <p><i>*Please note this lesson is set up for 90 minutes, but can be split into two 45-minute classes at the elementary level.</i></p> <p><i>Teachers will need to access and be familiar with the Nebraska Studies Patterson Site lesson prior to teaching this lesson.</i></p>
Materials & Resources	<p>Nebraska Studies Website</p> <p>Nebraska Studies – Patterson Site (NSPS)</p> <p>(http://www.nebraskastudies.org/0200/resources/06_patterson.pdf)</p> <p>Computers (for pictures and questions) OR Images can be printed and photocopied</p> <p>Smart Board/Promethean Board</p> <p>rulers</p>
Content Standards/ Indicators	<p>Social Studies: 8.1.1, 8.3.3, 8.3.7, 8.4.2, 8.4.6</p> <p>ELA:6.1.6e, 6.1.6.f, 6.1.6g, 6.3.1, 6.3.2</p>
Procedures & Routines	<p><u>Anticipatory Set:</u> (Day 1)</p> <p>The teacher will first read "Prehistoric Farm Families In Nebraska" on page 1 from NSPS to the class. Either on the computer or on the ELMO, teacher will display the photograph on page 4 and read the caption. Have students <i>stand up, hand up, pair up</i>. The students should discuss the following questions based on the picture on the ELMO/Computer: "If your family and your best friend's family lived here 1,000 years ago, how would you make a home for yourself? What would you build with? What do you think you would eat? What could you make your clothes from? What kinds of games could you play?" Give students 3 minutes to discuss. Teacher will have volunteers describe what they discussed and the answers they chose to these questions.</p>
Gradual Release of Instruction	<p><u>Modeled:</u></p> <p>Teacher will start by reading the "Setting the Stage: Historical Context". As a class, look at the maps 1a and 1b on the SMART board. Teacher will discuss the 3 questions in a whole group format. Teacher will read "Determining the Facts: Central Plains Tradition Life" pages 9-10 from NSPS. Students will be in groups of 4, and teacher will pose question 1. Students will discuss in <i>round robin</i> format. Then discuss as a whole class. This will continue in the same format for questions 2-6.</p>

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	<p>Shared: Students will then read #2 "Preservation of the Past" page 11 from NSPS. In groups of 2, they may start to discuss the comprehension questions. Then will discuss questions for comprehension as a whole group.</p> <p>Guided: (Day 2) Before class, teacher will have set-up 7 stations. The stations are provided in the packet from NSPS. There will need to be a copy per station, with students bringing paper and pencil to record answers. (or teacher can make copies for each student when they rotate). Stations:</p> <ol style="list-style-type: none">1. Visual Evidence: Drawing 1: Pithouse Floors after Excavation2. Visual Evidence: Photo 2: Animal Bones3. Visual Evidence: Drawing 2: Artist's Drawing of a Pithouse4. Visual Evidence: Photo 3: Stone Tools5. Visual Evidence: Photo 4: Bone Tools6. Map 2: The Patterson Site Neighborhood (ruler needed)7. Map 3: The Patterson Site (ruler needed) <p>Teacher will number students from 1-7. There will be approximately 2-4 students in a group. Each rotation will be about 7 minutes. While rotating to each group, students should take pen/pencil and paper. They are to record answers for the questions in each station. If time permits, you may discuss the various stations as a whole group.</p> <p>Independent: Students will be completing an independent activity for the following 90 min lesson or two 45 minute lessons. <i>*Please see Lesson 2 for this portion of the lesson.</i></p>
Summary	<p>Exit Card: Students will answer the following questions on a notecard to be turned in before the end of the class period.</p> <ol style="list-style-type: none">1. Name 2 specific items (i.e. excavations, maps, artifact images, and collected data) that were discovered at the Patterson Site. (ex. Bone tools, various stone tools, pithouses, animal bones)2. Describe in 3-4 sentences what life seemed to be like during the prehistoric time in Nebraska. (ex. <i>answers may vary.</i> During prehistoric Nebraska times, society was very different from today. People built their own homes out of mud and grew or killed their food. Families often lived together in the pithouses. Not only did animals provide food for the families, but the hide was also used by many to make their clothing and jewelry.)

PRE-1500

SITES

LESSON PLAN

Patterson Site: Prehistoric Farm Families in Nebraska

The lesson is based on *Archeology of the Patterson Site:
Native American Life in the Lower Platte Valley, A.D. 1000-1300*,
by John R. Bozell and John Ludwickson,
published in 1999 by the Nebraska State Historical Society and other sources.

This lesson was written by archaeologist Eric Kaldahl
for the NebraskaStudies.org website,
which is a production of NET, the Nebraska State Historical Society,
and the Nebraska Department of Education.

Students will interpret primary historical evidence (including images from excavations, maps, artifact images, and collected data) and examine the human-environment relationship between ancient Native American and the Nebraska landscape, all to understand more about the way of life of an important prehistoric people, the Central Plains tradition culture of Eastern Nebraska, and to understand the relationship between modern development and historic preservation.

**GRADE
LEVEL**4th - 8th26
pages

Prehistoric Farm Families in Nebraska (A.D. 1000-1400): Lessons from the Patterson Site



Rolling hills of grass, stream and river bottoms filled with trees, and overlooking it all were families who made their living in ancient Nebraska. Between one thousand and six hundred years ago, many Native Americans called eastern Nebraska their home.

These people used everything the land had to offer. They cut wood from the forested hills to build. They used mud to seal their homes tight against winter winds and summer storms.

They made cutting tools from stone and cooking pots from clay. They harvested plants and hunted animals for food and for clothes. They farmed the land.

Archaeologists call the culture of these farm families the Central Plains tradition. These people left behind hundreds of ruins and artifacts that are the material fragments of their lives. They had no written language.

Archaeologists study and preserve the past. Archaeologists excavate in the ruins of ancient homes when they are about to be destroyed. The Patterson site was one archaeological site that was destroyed little by little over the years. People needed to build new homes, and a highway needed to be improved. Before the bulldozers turned the earth, archaeologists, school children, and volunteers excavated at the Patterson site.

This lesson will let you see the information that was unearthed at the Patterson site. By using that information, you will do the job of an archaeologist. You will learn about the lives of Central Plains tradition people by studying the things they left behind. You will learn about the people who lived at the Patterson site, and you will learn about an ancient way of life in Nebraska that lasted for 400 years.



Unless otherwise noted, images throughout this lesson are Courtesy of the Nebraska State Historical Society. The objects photographed for this lesson are from the collections of the Nebraska State Historical Society.

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For Teachers: About This Lesson

The lesson is based on the *Archeology of the Patterson Site: Native American Life in the Lower Platte Valley, A.D. 1000-1300*, by John R. Bozell and John Ludwickson, published in 1999 by the Nebraska State Historical Society and other sources. This lesson was written by archaeologist Eric Kaldahl for the NebraskaStudies.org web site, which is a production of Nebraska Educational Telecommunication, the Nebraska State Historical Society, and the Nebraska Department of Education.

The author would like to thank the Nebraska State Historical Society for their invaluable assistance. This lesson could not have been created without the help, resources, photographs, collections, and staff of the Nebraska State Historical Society. This lesson asks school children to interpret primary historical source materials in the form of archaeological data, such as artifacts, ecofacts, site sketches, and tabulated data.

Where it fits into the curriculum

Topics: The lesson could be used in American Indian culture units dealing with prehistoric times. The lesson's main concerns are human interactions with the environment and the interpretation of primary historical sources in the form of archaeological evidence. As such, there are ties to social studies, math, science, and reading & writing standards.

Time Period: A.D. 1000-1400

Relationship to the Nebraska Education Standards: At the end of this lesson is a listing of Nebraska Education Standards that can be addressed through the use of this lesson. Following each listed educational standard, the part of this lesson to which the standard pertains is listed in brackets {}.

Objectives for students

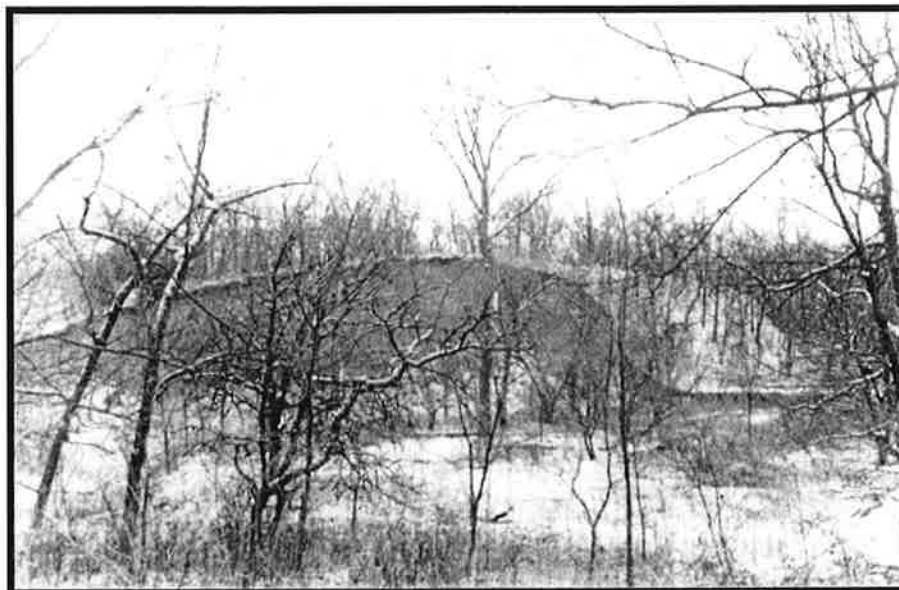
- 1) To interpret primary historical evidence, including images from excavations, maps, artifact images, and collected data.
- 2) To interpret the human-environment relationship between ancient Native American and the Nebraska landscape.
- 3) To understand more about the way of life of an important prehistoric people, the Central Plains tradition culture of Nebraska.
- 4) To understand the relationship between modern development and historic preservation.

Materials for Students

The materials listed below either can be used directly on the computer or can be printed out, photocopied, and distributed to students. The maps, images, and data are associated with comprehension and interpretation questions.

1. Three Maps (pages 6-8)
2. Two Student Readings (pages 9-11)
3. Two Drawings (page 12, page 14)
4. Four Photographs (page 12, pages 15-17)
5. Two Tables (page 8, page 15)

**Getting Started
Inquiry Questions**



The photograph above shows the location of the Patterson site. When families of ancient farmers lived here one thousand years ago, there were no grocery stores, no department stores, no hardware stores, no toy stores, no roads, no plumbing, no cars, no horses, no cows, and no pigs. They had to make their own homes, get their own food, make their own clothes, and their own toys.

If your family and your best friend's family lived here 1,000 years ago, how would you make a home for yourself? What would you use to build with? What do you think you would eat? What could you make your clothes from? What kinds of games could you play?

Setting the Stage: Historical Context

The ancient farmers who lived in Nebraska 1,000 to 600 years ago are called the Central Plains tradition culture. These ancient people built hundreds of homes in central and eastern Nebraska. Over the centuries, earth and soil has gradually covered the ruins of their homes, fields, and camps. These ancient buried places are called archaeological sites.

Many people live in eastern and central Nebraska today. The construction of new homes and roads has destroyed many of the archaeological sites of the Central Plains tradition. The Patterson site was a Central Plains tradition site. Archaeologists excavated it before the construction of new houses and a highway improvement project.

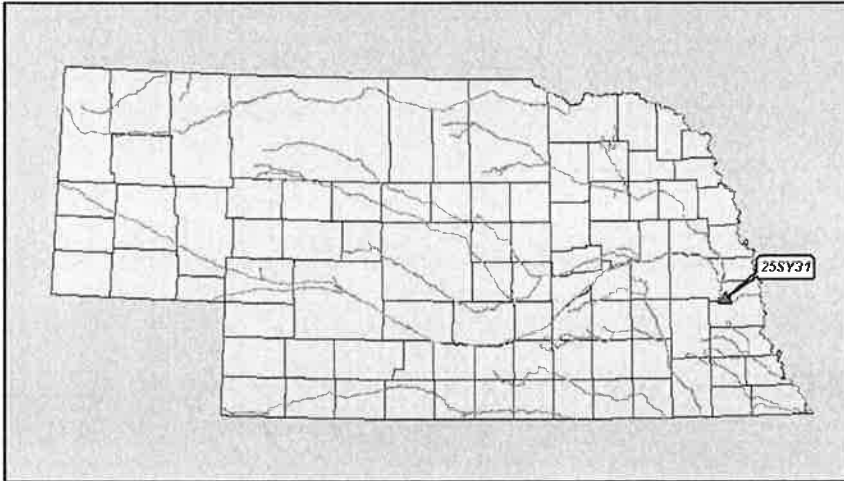
Archaeologists found many materials at the Patterson site. These materials will help us understand the lives of Central Plains tradition people. These Nebraska farmers made use of everything in their environment to provide for their needs. They grew crops and lived in small farming family groups. Their way of life lasted for 400 years. (Remember our own state of Nebraska isn't even 150 years old yet!) They carved stone and shell into jewelry. They molded clay into beautiful images of birds, fish, and people.

You will see and interpret the materials of the Patterson site. The Central Plains tradition people had no form of writing. The objects they made and used provide us with primary source evidence for understanding their lives.

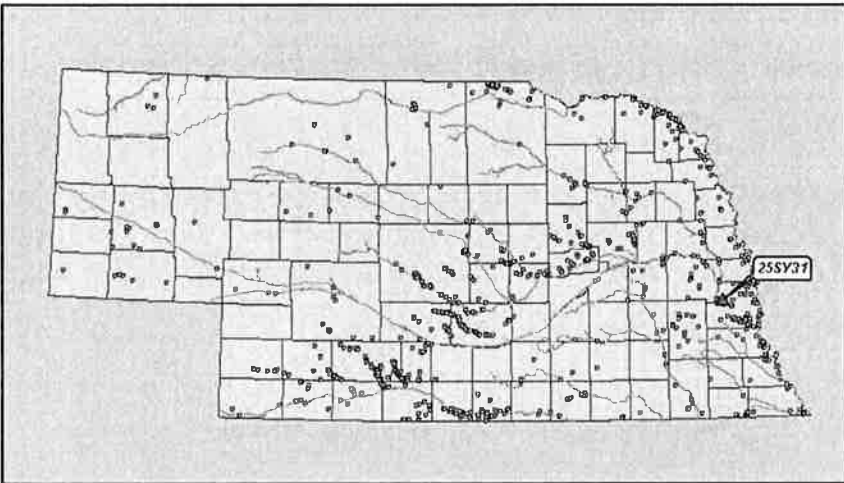
Locating the site: Maps

Map 1a: Patterson Site Location

(The Patterson Site is marked with a red triangle labeled 25SY31)



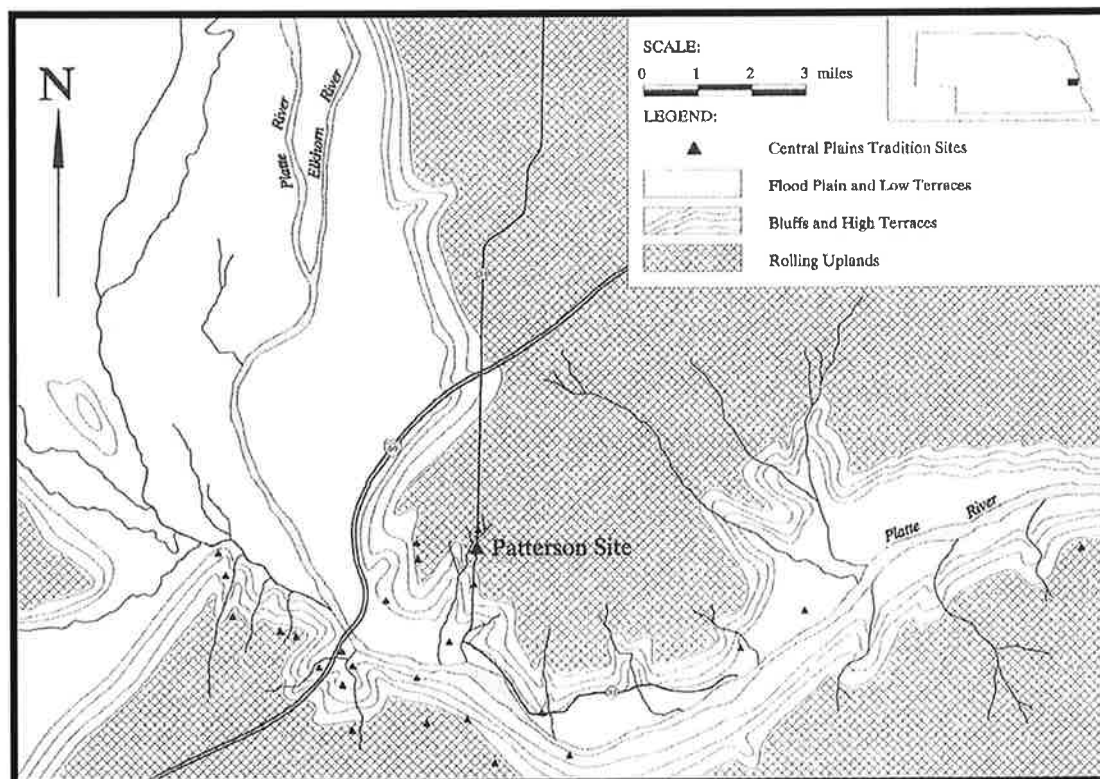
Map 1b: Central Plains Tradition Sites in Nebraska around A.D. 1000



Questions for Maps 1a and 1b

1. Locate the Patterson Site on Maps 1a and 1b. How would you describe its location?
2. How many Central Plains tradition sites have been found in Nebraska that date to A.D. 1000? If you find it hard to count all the dots, estimate them. Is the number of sites greater than 20 (sites > 20)? Greater than 50 (sites > 50)? Greater than 100 (sites > 100)? Less than 1,000 (sites < 1,000)?
3. Where in Nebraska did Central Plains tradition people live?

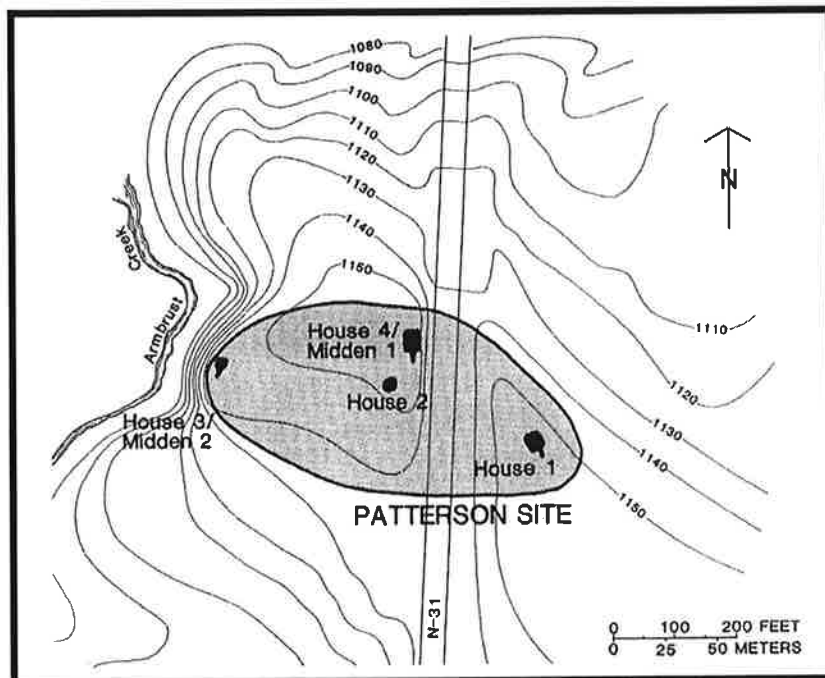
Map 2: The Patterson Site Neighborhood



Questions for Map 2

1. Look at the map legend. What kind of land is described in the key? Have you seen rolling hills or a river valley? What do these areas look like?
2. What river is close to the site?
3. What kinds of plants and animals do you find near the river and in the hills?
4. What would be good about living there if you wanted to garden, hunt, fish, and gather wild plants?
5. Using the map scale, how far from the Patterson site are other sites of the Central Plains tradition? Estimate how long it would take you to walk from the Patterson site to these other sites. [Hint: People can usually walk 2-3 miles in 1 hour.] They had no horses, no cars, and no bicycles, so they went everywhere by walking.

Map 3: The Patterson Site



After archaeologists had studied the Patterson site, they found four house ruins buried under the ground. House 2 has not been excavated. But Houses 1, 3, and 4 were excavated. In front of House 2 was an area of trash. Archaeologists call areas of trash a “midden.” On top of the ruin of House 4, they discovered that trash from later centuries had been tossed on top of the ruin. Archaeologists also discovered that not all of the house ruins and trash were created at the same time.

Table of Dates

Time Period	The House Ruin or Trash Area
A.D. 1050-1100	People built and lived in House 4
A.D. 1100-1250	No one lived at the site as far as we know
A.D. 1250-1280	People built and lived in House 3, and tossed their trash into Midden 1 and Midden 2
A.D. 1280-1320	People built and lived in House 1
Unknown Time Period	People built and lived in House 2

Questions for Map 3

1. How many houses were found at the Patterson site?
2. Using the scale on the map, how far apart were the houses at the Patterson site?
3. Using subtraction, how long a period of time passed from when people lived in House 4 to when people lived in House 3?
4. Why do you think people moved away from the site and then came back?

Determining the Facts

Student Reading #1: Central Plains Tradition Life (A.D. 1000-1400)

Can you imagine a time before roads, grocery stores, cars, horses, doctors' offices, and schools? Can you imagine a time before clothing stores, hardware stores, indoor plumbing, electricity, towns, and cities? Can you imagine a time before television, radio, CD-players, video games, and toy stores? Can you imagine a time when eastern and central Nebraska did not have large farm fields? Can you imagine a time when our state was all rolling grassland, prairies, marshes, wooded streams, and forested river valleys?

The time you imagined existed for thousands and thousands of years. The people who lived here in that time were Native Americans. Over those many thousands of years, Native American men, women, and children lived in many different cultures. We will talk about one of those cultures. Archaeologists call that culture the Central Plains tradition.

The families of the Central Plains tradition were Native American people. They lived in Nebraska from A.D. 1000-1400. That means they lived here from 600 to 1,000 years ago. They were farmers. The people of this culture lived in many parts of Nebraska. The largest numbers of them lived in central and eastern Nebraska.

Much of what we know about Central Plains tradition people has been learned through archaeology. Archaeology is the study of people and their cultures. Archaeologists study ancient cultures by examining the objects of past people. Artifacts are one kind of object. Artifacts are things that people made in the past, like a basket or a bowl or deer hide shirt. Ecofacts are another kind of object. Ecofacts are natural objects that past people used, like apples or walnuts or firewood.

Central Plains tradition people left many artifacts and ecofacts behind. They built houses that were dug into the ground. We call these pithouses. Before building their homes, they dug a pit knee-deep to waist-deep into the ground. Each pithouse had one big room that was square in shape. A long ramp would connect the pithouse with the outside surface.

After digging the pit for their house, they had to build the walls and the roof. Central Plains tradition people chopped down cottonwood, oak, and elm trees for building. They had no metal tools, so they chopped down trees with a kind of stone ax. Archaeologists call these axes celts. They would cut the tree trunks and branches down to the right size. Inside the pit of the pithouse, the home builders dug circular pits into the house floor. These little pits were just big enough to hold the posts for the roof supports and the walls.

On top of the wall and roof posts were placed timbers for the roof. Thinner branches and sticks were attached to the wall posts and roof timbers. The whole structure was covered over with daub. Daub is a sticky mixture of mud. The daub covering the house kept the rain and wind out.

In the center of the home was a fireplace, called the hearth. A hole was probably left in the roof to let the smoke from the fireplace out. Along the walls people placed their beds, probably on benches made from wood. Storage pits were dug two to four feet deep below the floor. These pits were used to store tools and to store food over the long winter.

A small pithouse would be only twelve or fifteen feet across. Small pithouses were probably built for one family of 4-6 people. Larger pithouses were 20, 30, or 40 feet across, and could house 20-40 people. Several families could live inside a larger pithouse. Can you imagine

living with your cousins, aunts, uncles, parents, brothers, sisters, and grandparents in one house? In one group of houses, there might be two to eight families.

Meals were cooked in clay cooking pots by the fireplace. Clay was gathered in the countryside, formed into pots, and heated to make ceramics.

Central Plains families grew crops in gardens, like corn, beans, and squash. They also grew some crops that you might not know very much about. They grew sunflowers, goosefoot, marshelder, and smartweed. They used wild plants, like wild grapes, berries, and nuts. They made hoes to help them work in their garden. The blade of their garden hoe was made from a large bone. Usually this bone was the shoulder blade bone from a bison.

For meat, they hunted with bows-and-arrows. They hunted deer, antelope, and bison. They caught squirrels, rabbits, and smaller animals. They fished in the rivers and streams, making fishhooks from bones or antlers. They had no metal tools. So, they had no nails to hold things together. Instead things were held together with woven string and rope. They used many kinds of fibers to weave their ropes, but fibers from reeds that grow in marshlands were probably common.

Big animals provided leather to make clothes. Sharp stones provided tools for cutting meat and scraping hides smooth. Other rough stones were used like sandpaper for smoothing arrowshafts. Also rough slabs of stone were used to grind seeds into flour.

Jewelry was made from hollow bone tubes and the shells of clams to make necklaces and bracelets.

For four hundred years, Central Plains families made east and central Nebraska their home. For reasons we don't understand, many families moved away from Nebraska about six hundred years ago. Archaeologists think that the great-great-great-great-great-great-great-great grandchildren of the last Central Plains tradition families would be known to Europeans as members of the Pawnee tribe of Nebraska, the Wichita tribe of Kansas, and the Arikara tribe of the Dakotas.

Student Reading #1 Comprehension Questions

1. What kinds of materials did Central Plains tradition people collect from their environment?
2. What plants did people grow in their gardens?
3. How many people lived in each house? About how many families lived in one settlement?
4. How do you think people stayed in touch with other families who lived miles away? Do you think they visited each other?
6. The Central Plains tradition people had no written words and no schools. How do you think children learned the things they needed to know?

Determining the Facts

Student Reading #2: Preservation of the Past

Today in Nebraska, our towns and cities are growing. During that growth new roads need to be built, new schools, stores, homes, and hospitals need to be built, and water pipes, electric lines, phones lines, and TV cable lines need to be installed. This means that sometimes pieces of the past get in the way of developing our new places.

The pieces of the past could include buried archaeological sites, like the house ruins you have seen pictured in this lesson. An archaeological site is a location where ancient ruins, ecofacts, and artifacts can be found. Archaeological sites contain information that can tell us about past people and their lives. These sites contain the stories of ancient Nebraska. Many people think these stories should be told.

Sometimes older buildings need to be torn down, like old schools, churches, courthouses, businesses, and houses. Sometimes an old school or church is very important to the people of a town or city. The building is a landmark, something that people care about.

People do need new houses, schools, and safe roads. So what happens when a new construction has to destroy something old? Some building projects take into consideration the old buildings or ancient ruins. Before the bulldozers begin their work, archaeologists get a chance to conduct an excavation, or to carefully study an old building.

These activities allow archaeologists and historians to collect information about the past, and share that information in books, web sites, pictures, and museums with Nebraska's people. The archaeological site or old building might get demolished, but some of the information is preserved. The information from these studies, and the artifacts, ecofacts, photographs, and other documents, are all stored in a public museum.

For instance, the materials from the Patterson site presented in this lesson are stored at the Nebraska State Historical Society in Lincoln. These materials can be studied by anyone in the years to come. Perhaps by someone like you!

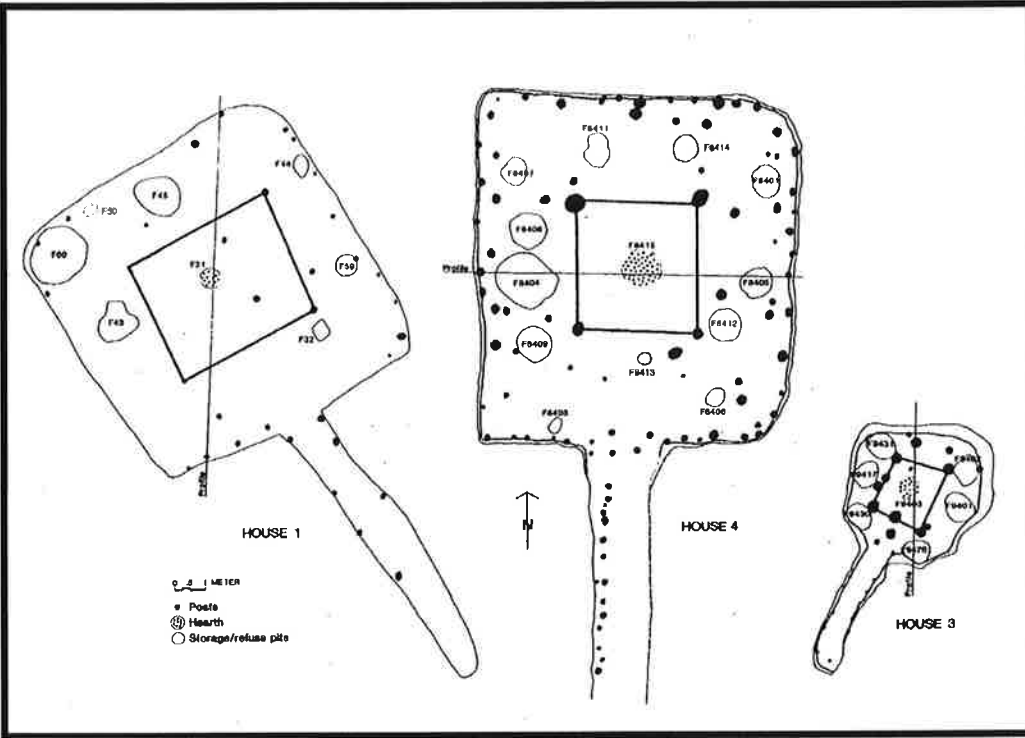
In the case of the Patterson site, the ruins of the old pithouses were excavated because some new houses were going to be constructed, and because Highway N-31 was going to be reconstructed. The Nebraska Department of Roads is a state agency. The Nebraska Department of Roads is responsible for road construction. Under our nation's laws, the Nebraska State Department of Roads made time and funds available to excavate and study the Patterson site. They also helped people learn what was found at the site. The Department of Roads provided funds to build exhibits and to write publications that citizens could read.

Reading Comprehension Questions

1. Is there a historic building in your town that is very important? For example, an old library, courthouse, movie theater?
2. Why are old places important to people?
3. What can we learn from historic buildings about people in the past?
4. What can we learn from archaeological sites about people in the past?
5. Today, people do need homes, hospitals, good roads, and water. How do you think the need to build and the need to preserve historic places can be balanced?
6. Why was the Patterson site excavated?

Visual Evidence

Drawing 1: Pithouse Floors after Excavation (Houses 1, 4, and 3 from left to right)



When archaeologists excavate a site, they make very careful drawings of everything that they find. They also take photographs of the excavation. Remember, the houses at the Patterson were going to be destroyed by construction. So the photographs, drawings, artifacts, and the notes written by the excavators are the only evidence of the ancient homes that we have left.

The houses at the Patterson were built, lived in, and then abandoned centuries ago. Over the centuries, the roof fell down and so did the walls. Then the house was covered over by years of dust from the air and rain that carried dirt into the abandoned house pit.

In the images on this page, you are looking at drawings and photographs from all that's left of the Patterson houses: the pithouse floors. The floors are full of big and little holes that archaeologists call floor features.

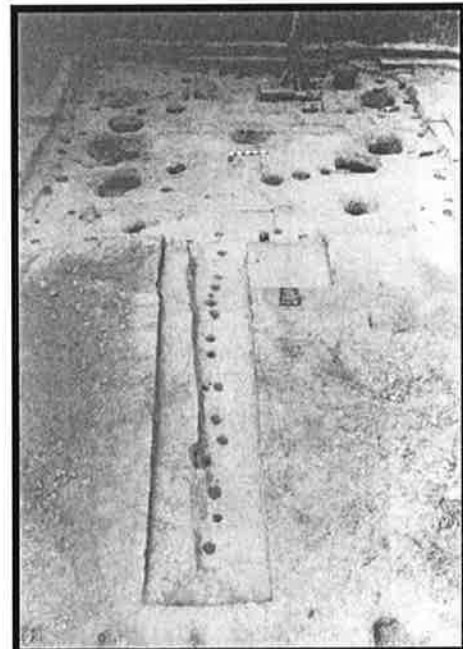


Photo 1: A Pithouse Floor after Excavation (House 4)

Questions for Drawing 1

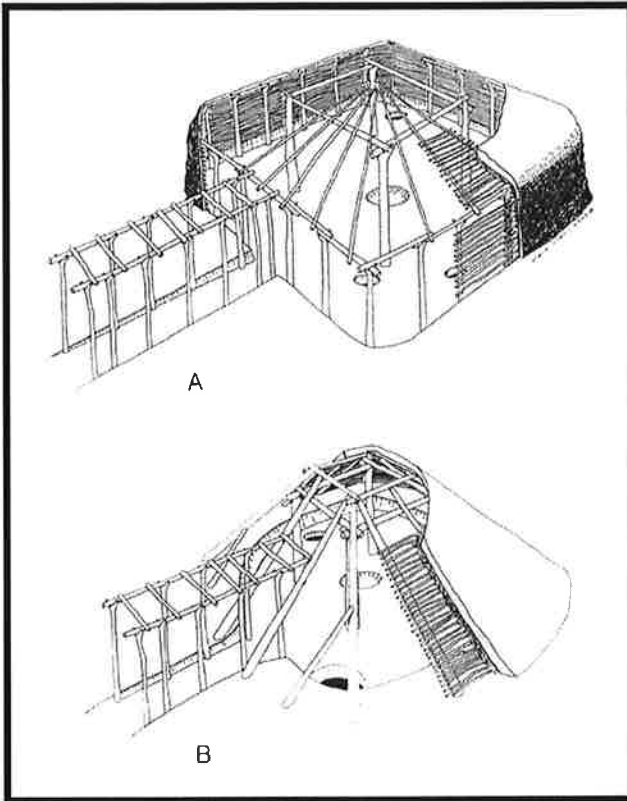
1. Based on what you have read about Central Plains tradition houses, can you identify the entrance ramp into the houses? Can you identify the holes where wooden posts were placed to support the roof? Can you see where the fireplace was located? And can you find the holes that opened into underground storage pits?
2. Using the scale on the drawing, pick one of the houses and measure it. How long is each wall? Remember, you are measuring in metric.
3. In your classroom, get some bean bags or blocks and a meter stick. Place 4 beanbags (or blocks) in a square on the floor. Using your measurements from question #2, make the corners of your square as far apart as the four corners of the house in the drawing. Now stand inside the square. How many people could fit in a house that size? (Hint: Some archaeologists estimate how many people could live in a pithouse by imagining how beds could fit along each of the walls. Then we estimate how many people could have slept in each bed. Adding the number of people in each bed together, we estimate how many people could have made that house their home.)

Questions for Photo 1

1. Photo 1 is a picture from House 4. Looking at the drawing of House 4 in Drawing 1, and the Photo 1, can you identify the entryway ramp into the house? Can you identify the holes where wooden posts were placed to support the roof? Can you see where the fireplace was located? And can you find the holes that opened into underground storage pits?
2. Look at the other objects in Photo 1. The checkered black-and-white stick is 1 meter long. Why did the archaeologists put that stick in the house before taking the photo? There is a small white arrow in the picture that points north. Why did the archaeologists put that in there? You can also see that a tree grew up in the ruin of the house. The archaeologists excavated around the tree. What do you think a tree's roots would do to an ancient buried house?

The Visual Evidence

Drawing 2: Artist's Drawing of a Pithouse



The drawing to the left is an imaginative drawing. The artist who drew it is imagining what a Central Plains tradition pithouse might have looked like. And just like a dollhouse, the artist has drawn the house so that we can peek inside. When a pithouse was finished, the roof would be closed over so rain wouldn't fall into the house. We think there was one small opening in the roof to let out smoke from the fireplace.

So what things did the artist draw from their imagination? Remember, the poles of wood that make up the walls and roof rotted away over the centuries. So we can't say for sure how tall the poles were. But the pattern of postholes does tell us where the roof and wall posts were placed. [The postholes are the little circular holes on the floor that you could see in Drawing 1 and Photo 1. A roof or wall support post would have been placed in each posthole to help keep the pole in place.]

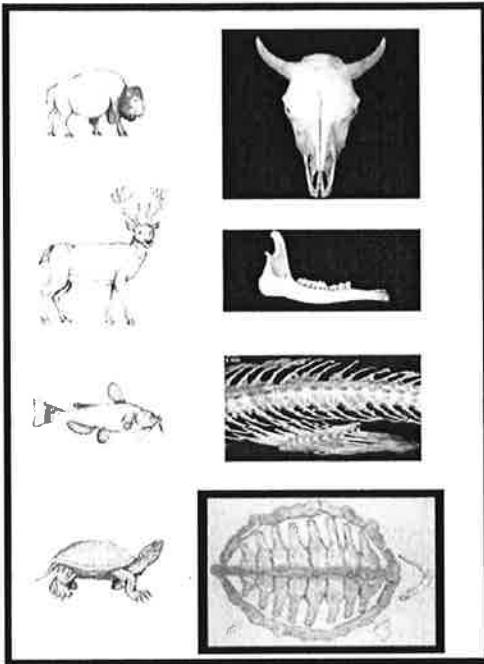
Archaeologists found pieces of hardened mud from the roof and walls of the house. Those pieces of mud are called daub. The outside of the house, on the walls and roof, would have been covered over with the daub to seal the house from wind, rain, snow, and ice. The daub was applied when wet, and then allowed to dry. The daub found by archaeologists has the impressions of wood from sticks, poles, and beams. This allows the artist to imagine how the poles and sticks were placed and how big they were.

Questions for Drawing 2

1. Study the drawing and make a timeline of how the house was built. What did the home builders do first? What did they do second? What did they do third? How long do you think it took a family to build their house?
2. The pithouse was dug a little way into the ground. Why would you want part of your house to be underground?
3. Can you identify where the pits for storing food are in the drawing? Can you find the fireplace?

Visual Evidence

Photo 2: Animal Bones



When archaeologists find parts of animals, they usually are talking about bones. But every bone does not equal one animal. Every animal has a large number of bones in its body. For example, if an archaeologist finds one right front leg bone and one left front leg bone of a deer, then those bones might only have come from one deer.

On the other hand, if an archaeologist finds one right front leg bone and a second right front leg bone of a deer, then those bones came from two deer. When counting animals, archaeologists figure out the Minimum Number of Individuals of each animal species at the site. This is called the MNI for short. An MNI of 2 antelope means that there were bones from AT LEAST two antelope found.

Animal drawings by Tony Schommer

Table of Animal Bones

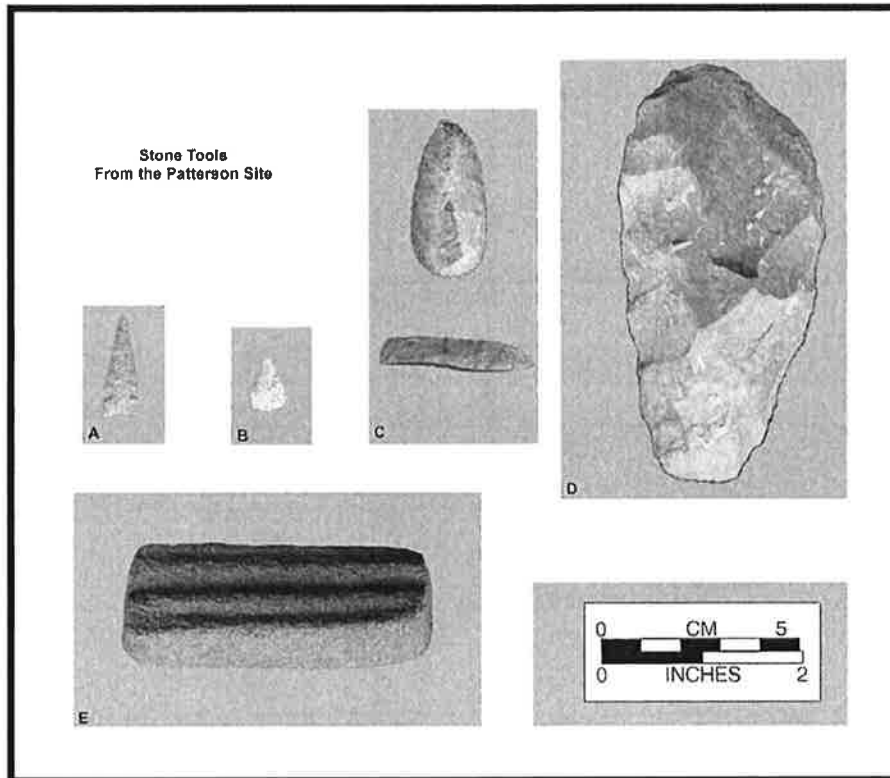
Kinds of Animals	Bones from House 1		Bones from House 3		Bones from House 4	
	MNI	Meat weight (kg)	MNI	Meat weight (kg)	MNI	Meat weight (kg)
Bison	0	0.00	0	0.00	1	450.00
Deer	1	6.00	1	45.50	2	68.00
Antelope	2	49.90	0	0.00	0	0.00
Mollusk	7	0.20	30	1.24	8	0.10
Fish	74	9.10	183	15.27	4	0.60
Birds	11	11.80	28	16.27	2	3.00
Turtles	1	2.27	4	3.62	1	0.45
Gophers, Cottontails & Squirrels	17	5.52	30	10.83	1	0.68
Totals	113	84.79	276	92.73	19	522.83

Questions about Photo 3 and Table of Animal Bones

1. What kinds of animals produced the most meat at the site?
2. Where would the Patterson site people have to go to get each type of food? A river? A forest? A grassland?
3. After you have dinner, the bones probably go into the trash. And the trash is usually taken away from the house. Why do you think that some animal bones were found in the Patterson site houses?

Visual Evidence

Photo 3: Stone Tools



The tools to the left are made from stone. When they are smooth, they are called ground stone tools. They were made by grinding one harder rock against a softer rock until the right shape was produced. The other tools are called flaked stone tools. They were made by chipping away pieces of stone until the right shape was produced.

Questions about Photo 3

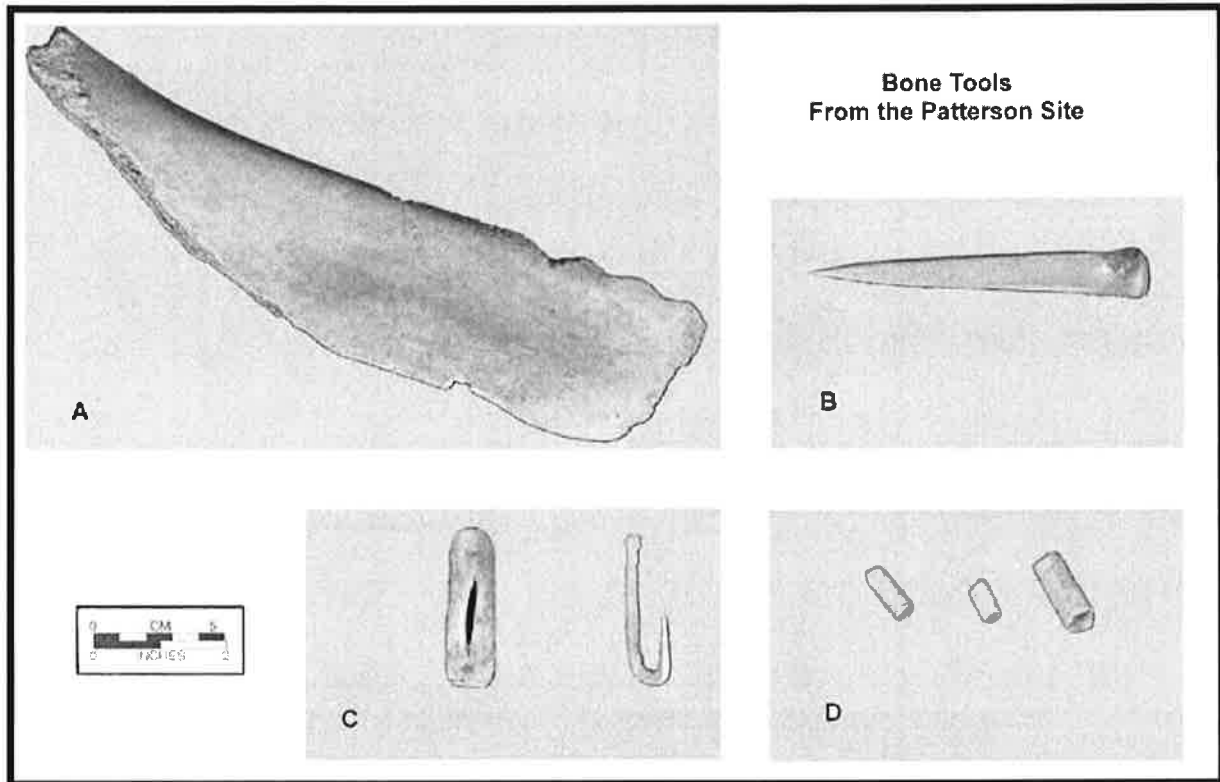
Using the letters in the photograph, match the tool to the task. Why do you think the tools you chose would be useful for a certain task?

TASK

1. You need to go hunting deer with a bow-and-arrow. What tool do you use for your arrow tip?
2. You need to scrape some deer hides to make clothes. You need to scrape off all the blood and muscles so that you have some nice, soft hide to make your leather clothes. What tool do you use?
3. You need to make some holes in some bone to make bone beads. What tool do you use?
4. You need to make some new arrows. You want the arrow shaft to be perfectly smooth so they fly straight. What tool do you use to smooth out your arrow shafts?
5. You need to cut up the hide of an animal. What tool do you use as your knife?

Visual Evidence

Photo 4: Bone Tools



The tools above are made from animal bone. Central Plains tradition people hunted animals for food, but they also used animal hide to make clothes and animal bones and antlers to make other tools.

Questions about Photo 4

Using the letters in the photograph, match the tool to the task. Why do you think the tools you chose would be useful for a certain task?

TASK

1. You are making a new shirt out of leather. While making the shirtsleeves, you realize that you need to punch a lot of little holes in the leather so that you can sew the shirtsleeve up. What tool would you use?
2. You are doing some gardening. You need to make a hoe. You get a good-sized branch to make the handle. What kind of tool would you use to make the blade of the hoe?
3. You need to go do some fishing. What tool do you use?
4. You are making a present for your mom. You are going to make here a necklace or a bracelet with all kinds of beads. What tool do you use?

Putting It All Together: Activities

Activity 1: Life Today and Yesterday

Have your students make a list of their basic life needs: food, shelter, family, friends, medicine, clothing, water, learning, and whatever else your students believe are essential human needs. Working in small groups, they should make a chart with each need listed down one side of the chart, one need per row. Then have your students make 3 columns, one labeled today, one labeled 1800s pioneers, and one labeled Central Plains tradition. Have the students write down how human needs are fulfilled in our time and in our culture. Then fill in the chart for the 1800s Euro-American pioneers and the Central Plains tradition. For example, farmers grow our food but send that food (after many steps) to grocery stores, where we buy food products for our families. The Central Plains tradition families and 1800s pioneers grew their own food, and stored that food for lean months. We hire contractors to build our homes. Pioneer families excavated dug-outs, and later built wooden homes, often with lumber brought by train from other states. Central Plains tradition families built their own pithouses dug into the ground and used wood from our wooded streams and river valleys. Differences and similarities should be emphasized. Students should consider how our interactions with the land today are different from the interactions of ancient people with the landscape.

Activity 2: Understanding how Ruins get to be Ruins

Part of understanding the information gathered from an excavation requires us to think about how and why people abandon old buildings. It also requires an understanding of what happens to abandoned buildings due to natural forces. As a class or in small groups, have your students find an abandoned structure. For safety reasons—make sure they do not approach or enter into an unsafe building environment. A lot can be learned from a safe distance when examining an abandoned farm, house, or business. Ask students to write down what seems to be left in the yard around the structure. The class can take pictures and explain the process of collapse. With an eye to safety, students can make a sketch map of the falling down building. If the structure is safe to approach, they can make a drawing with real measurements and a scale. Students should consider these questions: Is the property gathering the litter of people walking and driving by? Why? What did the people who abandoned the structure leave behind? Why those things? What objects were taken away when the people left? Students will have to imagine what objects might have been in the building while it was in use. What parts of the building has fallen down first? Why do your students think people abandoned the structure?

Now return to the Patterson site houses. No one wants to live in their own trash. So why do students think that trash was found inside the homes, like animal bones and plant parts? Why do the students think people might have abandoned their homes? What part of the houses probably fell down first, what second? Students can present their conclusions about why people abandoned homes, farms, and businesses in the past and present by displaying photos of the falling down structures and making a class presentation. They could also make a pithouse model to illustrate the process of collapse.

Activity 3: New Homes and Old Homes—What to do?

Have your students discuss what can be learned from old buildings, buried ruins, and artifacts. Then ask them how they feel about building new homes, bridges, or roads, knowing that many of those projects have to destroy old buildings and ruins. Have the class role play a discussion surrounding such issues. Have one group represent the safety and economic concerns of the state, and their decision as a state agency to improve a highway. The benefits for safety and economy are important to them. Have a second group role play a group of citizens who are concerned about the destruction of an archaeological site. The benefits of preserving the past are evident to them. Have a third group represent archaeologists. This group can discuss the benefits of excavating the archaeological site before the highway construction project destroys it. Wrap up the activity by discussing current projects in your county, town, or city that will result in the damage or destruction of a historical building or archaeological site. Have your students research the issues surrounding that project as a way of understanding the roles they are playing in the classroom activity. How has the Patterson site excavation, triggered by housing and road development projects, benefit Nebraska's people?

Supplementary Resources for Teachers

- www.nebraskastudies.org/0200/stories/0201_0121.html
- www.nebraskastudies.org/0200/stories/0201_0123.html
- www.nebraskahistory.org/archo/current.htm
- www.archaeolink.com/nebraska_archaeology.htm

Some Basic References

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Relationship to the Nebraska Education Standards

Social Studies Standards

FOURTH GRADE

4.1.1 Students will compare communities and describe how United States and Nebraska communities changed physically and demographically over time.

Example Indicators:

- Identify changes in daily life past and present, e.g., roles, jobs, communication, technology, schools, and cultural traditions. {Inquiry Questions, Historical Context, Map 1, Map 2, Map 3, Reading 1, Photo 2, Photo 3, Photo 4, Activity 1}

4.1.2 Students will describe the contributions from the cultural and ethnic groups that made up our national heritage: Native Americans, Hispanic Americans, African Americans, European Americans, and Asian Americans.

Example Indicators:

- Identify regional characteristics, e.g., Navaho, Amish, and Polynesian. {Inquiry Questions, Historical Context, Map 1, Map 2, Map 3, Reading 1, Photo 2, Photo 3, Photo 4, Activity 1}

4.1.4 Students will describe the interaction between Native Americans and their environment on the plains prior to European contact.

Example Indicators:

- Explain how Native Americans used the resources for daily living. {Inquiry Questions, Historical Context, Map 2, Reading 1, Photo 2, Photo 3, Photo 4, Activity 1}
- Identify different types of shelters used by Native Americans. {Reading 1, Map 3, Drawing 1, Photo 1, Drawing 2}
- Describe the daily life of a Native American. {Inquiry Questions, Reading 1, Photo 2, Photo 3, Photo 4, Activity 1}

4.1.7 Students will use higher level thinking processes to evaluate and analyze primary sources and other resources.

Example Indicators:

- Identify, analyze, and make generalizations using primary sources, e.g., artifacts, diaries, letters, photographs, art, and newspapers. {Drawing 1, Photo 1, Photo 2, Photo 3, Photo 4, Table of Dates, Table of Animal Bones, Activity 2}

4.1.10 Students will identify and use essential map elements.

Example Indicators:

- Use cardinal directions. {Map 1, Map 2, Map 3}
- Understand map keys, e.g., scale, symbols, compass rose. {Map 1, Map 2, Map 3}

4.1.11 Students will use maps and globes to acquire information about people, places, and environments. {Map 1, Map 2}

4.1.12 Students will identify the geographic and human characteristics of the regions of the United States and Nebraska. {Map 1, Map 2}

4.1.13 Students will describe the process of making laws, carrying out laws, and determining if laws have been violated.

Example Indicators:

- Explain the role of citizenship in the promotion of laws. {Reading 2, Activity 3}

EIGHTH GRADE

8.1.1 Students will analyze major cultures in the Americas before the 17th century.

Example Indicators:

- Describe the regional culture groups of early Native Americans in North America, e.g., the Northern, Northwestern, Plains, Mound Builders, Eastern Woodlands, and Southwestern Native Americans, etc. {Inquiry Questions, Historical Context, Map 2, Reading 1, Drawing 1, Photo 1, Drawing 2, Photo 2, Photo 3, Photo 4, Table of Animal Bones, Activity 1}
- Explaining how geography and climate influenced the way Early American cultural groups lived. {Inquiry Questions, Historical Context, Map 1, Map 2, Reading 1, Photo 2, Photo 3, Photo 4, Table of Animal Bones, Activity 1}

8.3.3 Students will compare the policy-making process at the local, state, and national levels of government.

Example Indicators:

- Explain the functions of departments, agencies, and regulatory bodies. {Reading 2, Activity 3}
- Explain the ways that individuals and cultural, ethnic, and other interest groups can influence government policy makers. {Reading 2, Activity 3}

8.3.7 Students will summarize the rights and responsibilities of United States citizens.

Example Indicators:

- Identify the way individuals of cultural, ethnic, and other interest groups can influence governments. {Reading 2, Activity 3}

8.4.2 Students will demonstrate skills for historical analysis.

Example Indicators:

- Identify, analyze, and interpret primary sources, e.g., artifacts, diaries, letters, photographs, art, documents, newspapers, and contemporary media, e.g., television, movies, and computer information systems to better understand events and life in United States history to 1877. {Drawing 1, Photo 1, Photo 2, Photo 3, Photo 4, Table of Dates, Table of Animal Bones, Activity 2}

8.4.6 Students will improve their skills in historical research and geographical analysis.

Example Indicators:

- Identify analyze, and interpret primary sources and secondary sources to make generalizations about events and life in world history up to 1000 A.D. {Map 2, Drawing 1, Photo 1, Photo 2, Photo 3, Photo 4, Table of Dates, Table of Animal Bones, Activity 2}

Science Standards**FOURTH GRADE**

4.1.2 By the end of fourth grade, students will develop an understanding of evidence, models, and explanation.

Example Indicators

- Create a model, graph, or illustration that represents an object, living thing, or an event. {Map 3, Table 1, Drawing 1, Photo 1, Drawing 2, Activity 2}

4.1.4 By the end of fourth grade, students will develop an understanding of form and function. {Photo 3, Photo 4}

4.2.1 By the end of fourth grade, students will develop the abilities needed to do scientific inquiry.

Example Indicators

- Ask a question about objects, organisms, and events in their surroundings. {Inquiry Questions, Table of Dates, Map 3, Activity 2, Photo 2, Table of Animal Bones, Photo 3, Photo 4}
- Use data develop reasonable explanations. {Inquiry Questions, Table 1, Map 3, Activity 2, Table of Dates, Table of Animal Bones, Photo 3, Photo 4}
- Communicate procedures, results, and explanations of an investigation. {Activity 2}

4.4.3 By the end of fourth grade, students will develop an understanding of living things and environments.

Example Indicators

- Describe how humans and other living things cause both positive and negative changes in their environment. {Reading 1, Activity 1, Map 2, Table 2 of Animal Bones}

4.5.1 By the end of fourth grade, students will develop an understanding of the characteristics of earth materials.

Example Indicators

- List earth materials that are used by humans (e.g., water, fossil fuels, ores, soils). {Reading 1, Activity 1, Photo 3}
- Select the best earth material for a specific human use (e.g., marble–buildings, clay–pottery, coal–heat). {Reading 1, Activity 1, Photo 3}

4.5.3 By the end of fourth grade, students will develop an understanding of the changes in the earth and sky.

Example Indicators

- Describe how slow processes (e.g., erosion) and rapid processes (e.g., earthquakes); change the earth’s surface. {Activity 2}

4.6.3 By the end of fourth grade, students will develop an understanding of the abilities to distinguish between natural objects and objects made by humans.

Example Indicator

- Classify an object as either natural or manufactured. {Photo 2, Photo 3, Photo 4}

4.8.1 By the end of fourth grade, students will develop an understanding of science as a human endeavor.

Example Indicators

- Research and report on how science is used in different careers. {Reading 2}

EIGHTH GRADE

8.1.2 By the end of eighth grade, students will develop an understanding of evidence, models, and explanation. {Map 3, Table of Dates, Drawing 1, Photo 1, Drawing 2, Activity 2}

8.1.3 By the end of eighth grade, students will develop an understanding of change, constancy, and measurement.

Example Indicators

- Apply English and metric systems of measurements. {Map 2, Drawing 1, Photo 1, Activity 2}

8.1.4 By the end of eighth grade, students will develop an understanding of form and function.

Example Indicator {Photo 3, Photo 4}

8.2.1 By the end of eighth grade, students will develop the abilities needed to do scientific inquiry.

Example Indicators {Inquiry Questions, Table of Dates, Map 3, Activity 2, Photo 2, Table of Animal Bones, Photo 3, Photo 4}

- Identify questions and form hypotheses that can be examined through scientific investigations.
- Use appropriate tools and techniques to gather, analyze, and interpret data.
- Given evidence, develop descriptions, explanations, predictions, and models.
- Show the relationship between evidence and explanations.
- Recognize and analyze alternative explanations and predictions.
- Communicate scientific procedures and explanations.
- Use mathematics in scientific inquiry.

8.8.1 By the end of eighth grade, students will develop an understanding of science as a human endeavor. {Reading 2}

8.8.2 By the end of eighth grade, students will develop an understanding of the nature of science.

Example Indicators {Inquiry Questions, Table of Dates, Map 3, Activity 2, Photo 2, Table of Animal Bones, Photo 3, Photo 4}

- Formulate and test a hypothesis using observations, experiments, and models.
- Use questioning, response to criticism, and open communication when defending a conclusion.
- Evaluate the results of scientific investigations, experiments, observations, theoretical models, and the explanations proposed by other scientists.
- Understand that scientific theories are based on observations, governed by rules of reasoning, and used to predict events.

Mathematics Standards

FOURTH GRADE

4.1.1 By the end of fourth grade, students will demonstrate place value of whole numbers through the millions and decimals to the hundredth place.

Example indicators:

- Read and write numerals (in digits and words) through the millions place and decimals to the hundredth place. {Table of Animal Bones}

4.3.1 By the end of fourth grade, students will estimate, measure, and solve word problems using metric units for linear measure, area, mass/weight, capacity, and temperature.

- Use the appropriate units of measurement. {Map 2, Drawing 1, Activity 2}
- Estimate and accurately measure length to the nearest meter or centimeter and calculate area. {Drawing 1}

4.5.1 By the end of fourth grade, students will collect, organize, record, and interpret data and describe the findings.

Example indicators:

- Collect, organize, and interpret data in line plots, tables, charts, and graphs (pie graphs, bar graphs, and pictographs). {Table of Dates, Table of Animal Bones}
- Draw valid conclusions from displayed data. {Table of Dates, Table of Animal Bones}

EIGHTH GRADE

8.5.1 By the end of eighth grade, students will collect, construct, and interpret data displays and compute mean, median, and mode.

Example indicator:

- Select appropriate representations of data when constructing data displays (graphs, tables, or charts). {Table of Dates, Table of Animal Bones}
- 8.5.2 By the end of eighth grade, students will read and interpret tables, charts, and graphs to make comparisons and predictions. {Table of Dates, Table of Animal Bones}

Reading/Writing Standards

FOURTH GRADE

4.1.3 By the end of the fourth grade, students will identify the main idea and supporting details in what they have read.

Example indicators:

- Identify purpose for reading, recall prior knowledge, and preview illustrations and headings to make predictions. {Reading 1, Reading 2}
- Answer literal, inferential/interpretive, and critical questions. {Map 3, Reading 1, Reading 2, Drawing 1, Photo 1, Drawing 2, Photo 3, Photo 4}

4.1.7 By the end of the fourth grade, students will identify and apply knowledge of the text structure and organizational elements to analyze nonfiction or informational text.

Example indicators:

- Identify the structure of nonfiction (e.g. question/answer, cause/effect, sequence, comparison/contrast, problem/solution, description). {Reading 1, Reading 2}
- Ask how, why, and what-if questions in interpreting nonfiction text. {Reading 1, Reading 2}
- Follow written directions. {Map 1, Map 2, Map 3, Table of Dates, Drawing 1, Photo 1, Drawing 2, Photo 2, Table of Animal Bones, Photo 3, Photo 4}

4.2.5 By the end of the fourth grade, students will demonstrate the use of self-generated questions, note taking, and summarizing while learning.

Example indicators:

- Record important ideas from information provided by others. {Reading 1, Reading 2, Activity 1, Activity 2, Activity 3}

4.3.1 By the end of the fourth grade, students will participate in group discussions by asking questions and contributing information and ideas.

Example indicators:

- Contribute information and ask questions relevant to the topic discussed. {Activity 2, Activity 3}
- Use subject-related vocabulary in discussions. {Activity 2, Activity 3}

EIGHTH GRADE

8.1.1 By the end of the eighth grade, students will identify the main idea and supporting details in what they have read.

Example indicators:

- Answer literal, inferential/interpretive, and critical questions. {Map 3, Table of Dates, Reading 1, Reading 2, Drawing 1, Photo 1, Drawing 2, Photo 2, Table of Animal Bones, Photo 3, Photo 4}
- Scan to locate specific details. {Reading 1, Reading 2}

8.1.5 By the end of the eighth grade, students will identify and apply knowledge of the text structure and organizational elements to analyze nonfiction or informational text.

Example indicators:

- Identify the structure of expository text (question/answer, cause/effect, sequence, comparison/contrast, problem/solution, description). {Reading 1, Reading 2}
- Generate how, why, and what-if questions in interpreting nonfiction text. {Reading 1, Reading 2}

8.2.5 By the end of the eighth grade, students will demonstrate the ability to use self-generated questions, note taking, summarizing and outlining while learning.

Example indicators:

- Generate questions, take notes, and summarize information gleaned from reference works and experts. {Reading 1, Reading 2, Activity 1, Activity 2, Activity 3}

8.3.1 By the end of the eighth grade, students will participate in group discussions by asking questions and contributing information and ideas.

Example indicators:

- Contribute knowledge and ask questions relevant to the topic discussed. {Activity 2, Activity 3}
- Use subject-related vocabulary in discussions. {Activity 2, Activity 3}