Texas Archeology in the Classroom

A Unit for Teachers

Compiled by

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TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

A Texas Archeology Awareness Month Publication

Archeology Division

Texas Historical Commission

Austin 1998

Contents

Acknowledgments

In 1989, in an effort to increase the archeological awareness of the citizens of Texas, the Texas Archeological Society initiated the first Texas Archeology Awareness Week (TAAW) observance This effort was due in large part to Ms Teddy Lou Stickney of Midland, who worked untiringly to see that TAAW was a success and that it would become an annual observance. Since that time, TAAW has continued to grow and in 1996 it was expanded to a month-long observance to become Texas Archeology Awareness Month (TAAM). Teddy Lou has continued to be a driving force behind the success of the program, and her ongoing efforts and support are greatly appreciated.

Pat Mercado-Allinger, now State Archeologist, served as first TAAM coordinator for the Texas Historical Commission's Office of the State Archeologist (now Archeology Division) and was instrumental in the THC becoming the focal point for this annual observance.

Joan Few, adjunct professor at the University of Houston at Clear Lake, has played in important role in the evolution of TAAM. She became involved in 1992 and helped compile the first teachers' booklet. She, too, has remained a staunch supporter of Archeology Awareness and has strengthened the Council of Texas Archeologists' involvement in the observance.

Cathy Hoyt, former THC staff member, helped develop the first extensive list of resources for teachers, and much of her work is still reflected in Part III of this unit.

Pam Wheat, now coordinating the THC's educational outreach program for the *Belle* shipwreck project, also has been a major player. We appreciate her encouragement, her critical reading of this unit, and her continued support.

Nola Davis saved us hours of work by guiding us through illustrative materials available from the Texas Parks and Wildlife Department, and we appreciate her time and artwork and the department's permission to use its materials.

One of the prime goals of the TAAM program is to educate students about the importance of preserving the archeological heritage of Texas. As this program has continued to grow and expand, a number of small publications have been produced by the THC that were designed to provide resource information to teachers and to provide general archeological background information to students. In 1996 the THC was awarded a grant from the Texas Council for the Humanities, a state program of the National Endowment for the Humanities, to develop a comprehensive unit on Texas archeology that will be distributed to teachers for use in their classrooms. Because of the support given by the Texas Council for the Humanities we were able to produce this unit, which we believe will be a valuable aid to teachers in bringing the excitement that archeology has to offer into their classrooms.

A number of individuals have contributed in the compiling, editing, reviewing, and producing of this unit for teachers. Among the individuals who reviewed the draft version and made valuable comments and suggestions for improving the unit are: Carol Ascne (Cedar Park Middle School, Cedar Park), Nathan Barber (Waco), Mary Black (University of Texas at Austin), Vicki Burtchell (Thornton Elementary, Temple), Bettye Carter (Bonham Middle School, Temple), Beverly Hamby (Longfellow Middle School, San Antonio), Emilie Harris (Austin), Charlotte "Betsy" Kiker (San Antonio), Wendy Levine (Purple Sage Elementary, Austin), Judy Meredith (Benold Middle School, Georgetown), Laurie Moseley (Springtown), Carol Ramirez (Williams Elementary, Austin), Lonna Sanderson (Graham Elementary, Austin), Emilie Wasson (Voigt Elementary, Round Rock), Brenda Whorton (Dallas), Susan Willis (Barton Hills Elementary, Austin), and Joanne Witschorke (Marion). To each of you we offer our thanks and appreciation.

Drawing of spectacles in "The Naming of Parts" activity Adapted from *Sears Catalogue 1901.*

Drawings of painted pebbles in "Painted Pebbles" activity Adapted from "Painted Pebbles: Styles and Chronology," by Mark L. Parsons, in *Ancient Texans: Rock Art and Lifeways along the Lower Pecos,* by Harry J Shafer with photographs by Jim ZIntgraff (Texas Monthly Press, Austin, 1986), and from *The Rock Art of Texas Indians,* by Forrest Kirkland and W.W Newcomb, Jr. (University of Texas Press, Austin 1967).

Drawing of bison in "The Buffalo Soldiers Site" activity: Adapted from military emblem of the Tenth Regiment, United States Cavalry.

Barb wire drawings in "Panhandle Dugout" activity: adapted from *Antique Barb Wire Collecting,* by Bryan Wolf (privately published, Crystal Beach, Texas. 1969).

Historic photograph in "Farm and Ranch Life" activity: Courtesy of Roland Pantermuehl.

Photograph of site vandalism in "Thieves of Time" activity: Courtesy of the photographer, Bob Parvin.

Poster art by Cheyenne Lemond, in "Additional Activity Ideas for Teachers," courtesy of Eileen Thompson.

Designs from Caddoan pots, in "Decorate Your Own Caddoan Pot" supplemental activity: Adapted from *Handbook of Texas Archeology: Type Descriptions,,* by Dee Ann Suhm and E.B. Jelks (Texas Archeological Society and Texas Memorial Museum, Austin, 1962).

Mask drawings in "The Masks of October" supplemental activity. adapted from *The Rock Art of Texas Indians,* by Forrest Kirkland and W.W. Newcomb, Jr. (University of Texas Press, Austin 1967) and from *Spirits from the South,* by Kay Sutherland (special issue, *The Artifact* 34, no. 1–2 (1996).

"booklet." This treatment should make it possible to use any of the topics independently. To make these "booklets" more useful for different grade levels, they may be used (1) as background information for the teacher, or (2) as material that can be photocopied and distributed to students.

At the end of Part I a Glossary is provided. The Glossary includes all words that appear in boldface in the text. Many of the words are defined at their first use in the text or their meaning is apparent from the context. Nevertheless, the glossary will allow both students and teachers easy review of these sometimes complex concepts as they are reused throughout this unit—and especially as they occur in the classroom activities.

Part II consists of classroom activities. Most of these activities will be more meaningful if general background information is provided from Part I. However, most of them can be used with only the information provided in the activity guide itself.

Part III includes resources for teachers who wish to use additional materials and information that are not included in this booklet.

Part IV consists of additional items that can be photocopied and used as supplemental handouts for students.

BE AWARE!

It is unlawful in the State of Texas to excavate on school grounds without an antiquities permit. School grounds are public property. Teachers wishing to plan student participation projects involving excavation should arrange for students to participate in field schools or volunteer in excavations under the direction of a professional archeologist. Archeological excavations are scientific methods of obtaining information—they are not fun and games. Teaching students to dig can lead to the destruction of irreplaceable sites.

PART I

Introduction to Archeology, Prehistory, and Historic Sites

My sense is that the future is this wonderfully unfolding pageant, informed completely by our own awareness of the past.You can't possibly know where you're going if you don't know where you've been.

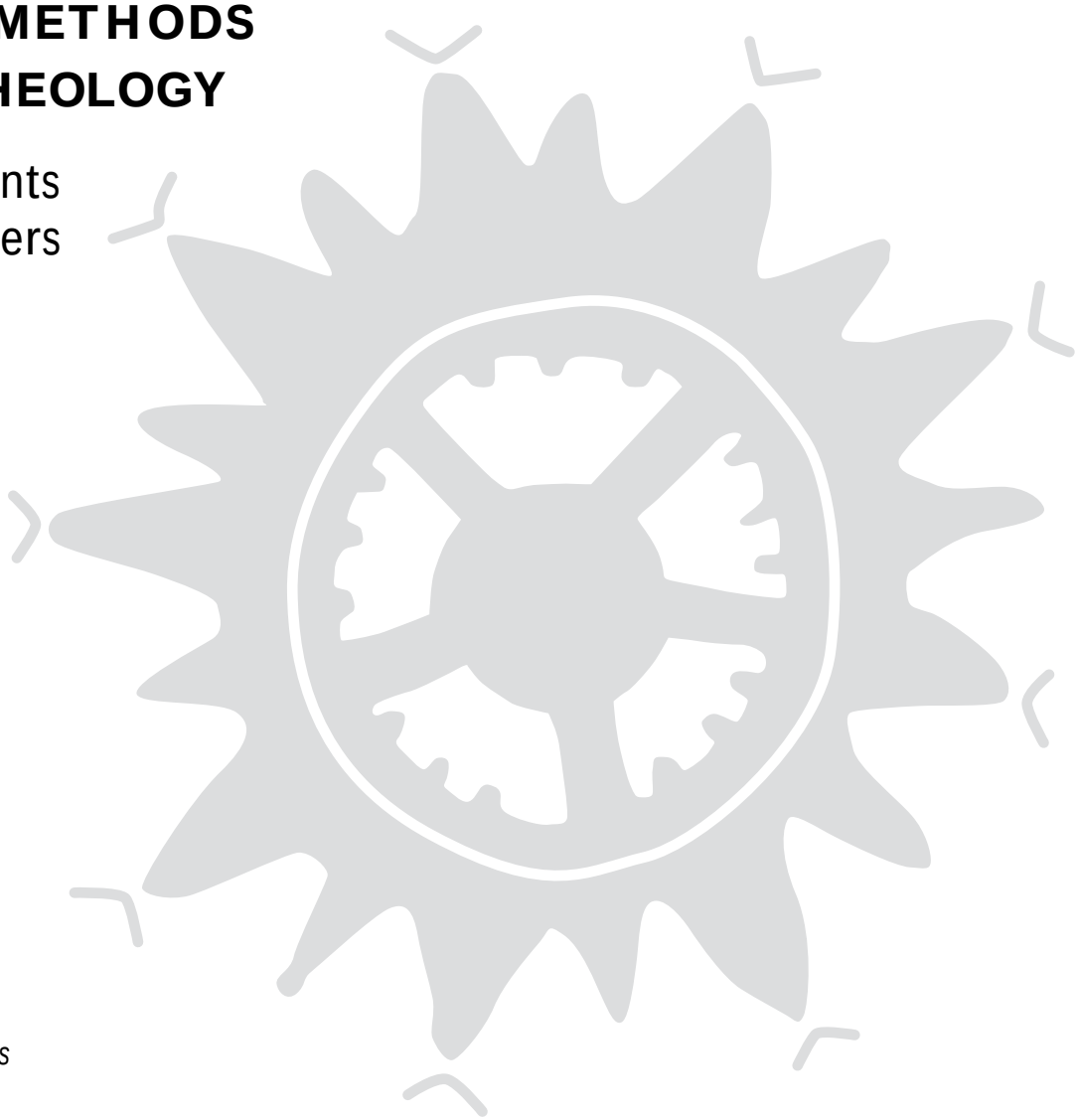
—Ken Burns, Producer
PBS Series, *The Civil War*

How Archeologists Work

An Introduction to

BASIC METHODS of ARCHEOLOGY

for Students and Teachers



BOOKLET A

Adapted from
The Indian Years

Archeology Division
TEXAS HISTORICAL COMMISSION
Austin 1998

Preface

This section, or "booklet," on how archeologists work is intended as an introduction to the basic methods of archeology for teachers and students (primarily grades 4 through 7). Teachers may photocopy without permission any or all of this section for classroom use only. Other use of this material requires permission from: Archeology Division, Texas Historical Commission, P.O. Box 12276, Austin, TX 78711-2276.

Each booklet in Part I is assigned a letter (Booklets A, B, and C) that appears on its title page. The pages of each booklet are then numbered individually, as A-1, A-2, etc. This should help in keeping the booklets in order if they are removed from the unit for photocopying.

Because of the nature of archeology, some of the technical and cultural terms used may be new to young readers. An attempt has been made to identify all of the troublesome terms and "highlight" them in **boldface**. Definitions of terms that appear in boldface in the text are given in the Glossary at the end of Part I.

Although intended primarily for young readers, *The Indian Years* (from which this text is adapted) has been widely used as a basic introduction to the subject for both older students and adults. Teachers may therefore choose to use this material either as background material for classroom discussion or as text to be assigned for reading.

This section should serve as adequate methodological background information for classroom activities in Part II of this unit. Those who want more information should see the list of resources in Part III.

Understanding the Past

What Is Archeology?

There are many different ways to study people. The science of studying the cultural behavior and evolution of people is called **anthropology**. The special branch of anthropology that is concerned with the study of people in the past is called **archeology.**

Archeologists study past **lifeways** by **excavating** in the places where people once lived. Excavation is a very careful, measured, scientific digging process. Many different kinds of information can be gained through scientific excavation. By studying this information, the archeologist can re-create parts of the history of long-ago people.

Archeologists are detectives, scientists, and reporters. They search for clues through excavation. They study these clues scientifically in the laboratory. Then they report their findings so we can know how early people once lived. Archeologists study cultures that existed in **prehistory**—that is, in the time before written history. Archeologists also study historic cultures.

How Archeological Study Begins

Archeologists begin their study of the past by finding a **site**. A site is any place where people once lived and left behind **artifacts** or other **material remains**. These remains—such as tools, bone, or rocks used around a campfire—are clues that will help solve the mysteries of the past.

In very early sites the remains left by the culture may not be well preserved. Often stone tools are all that remain in prehistoric sites. **Perishable artifacts** made of wood or plant fibers are seldom recovered from ancient sites because the materials have long since rotted away.

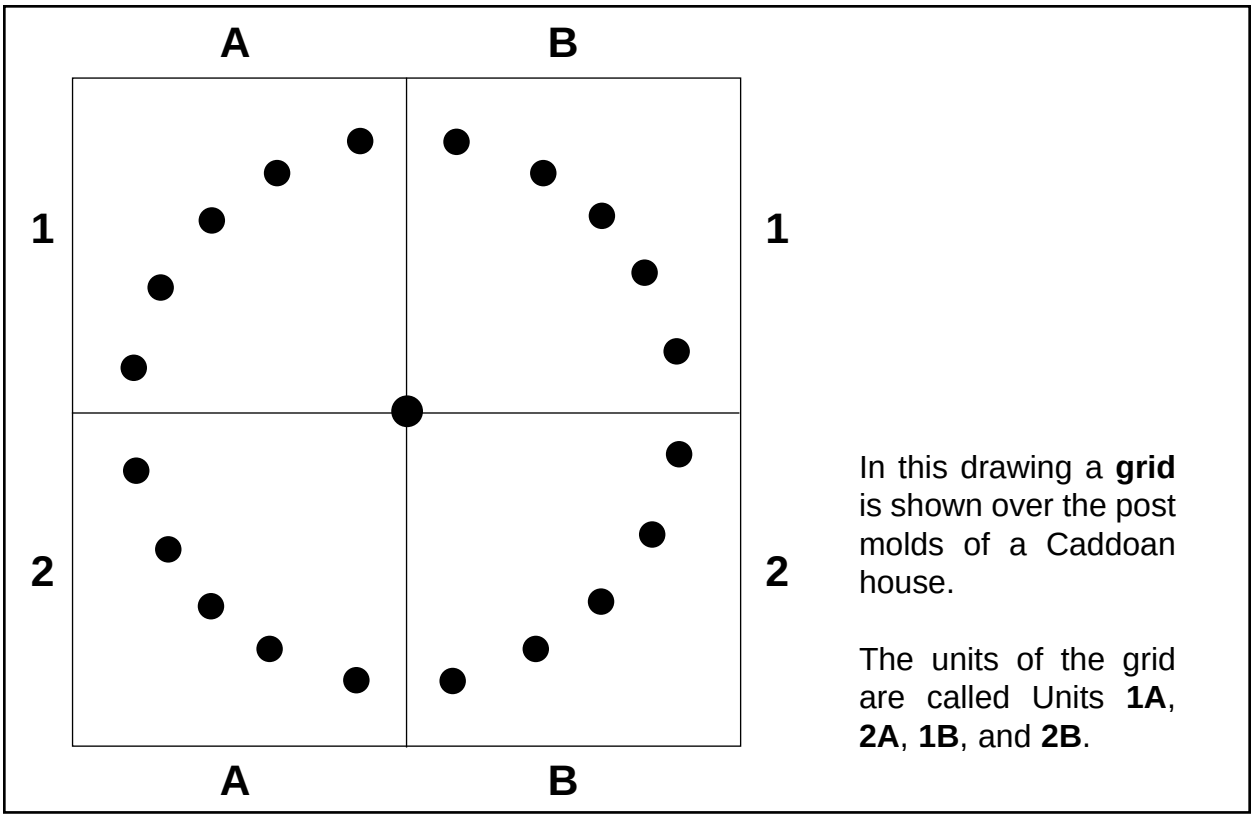
A site may be as big as a village where hundreds of people once lived for generations. Or, a site may be as small as a camp where a few hunters stopped for a short time.

The information about a newly discovered archeological site is recorded on a **site form**. Most archeologists in Texas use a standard form that is called the State of Texas Archeological Site Data Form. The form asks many questions about the site, including these:

- Who owns the site?
- Exactly where is the site located?
- How big is the site?
- What is the environment like in the site area?
- Based on visible evidence, what period does it appear to date from?
- Who recorded the site, and when?
- Has a site number been assigned?

The form also requires that the archeologist include a sketch map of the site, and a copy of a **topographic map** showing exactly where the site is located.

A copy of the site form, along with any other site notes and photographs, is then sent to an **archeological repository** for permanent curation.



In this drawing a **grid** is shown over the post molds of a Caddoan house.

The units of the grid are called Units **1A**, **2A**, **1B**, and **2B**.

*The archeologist uses wooden stakes and string to divide the site into measured units. This forms a **grid**, which helps the archeologist keep accurate records of exactly where things are found.*

How Sites Are Numbered

In most Texas repositories, site forms and other archeological records are filed by county, and by site number within the county.

In the United States a special system is used for numbering archeological sites. The number tells the state, county, and the order in which the site was recorded.

Each state has its own number—the number for Texas is 41. Each county in Texas has a special abbreviation that is used in site numbers. The last part of the site number tells how many sites were recorded in the county before this site. A Texas site number looks like this:

41 BX 52

This number means: Texas (41), Bexar County (BX), the 52nd site recorded for Bexar County.

Site numbers make it easy to keep records of sites. Many sites are also given names. Some have interesting names like Bonfire Shelter, Devil's Cave, or Black Hopper Site. Naming a site can be more fun than giving it a number, but the number is more important to the scientist.

Archeological Excavation

Once a site has been located, it can be studied in a way that will tell us about the people who used it. The most complete way to study a buried site is through scientific excavation. First the location of the site is carefully studied and photographed by the archeologist. Then surveyor's instruments are used to make an accurate map of the site. In the next step, the archeologist uses wooden stakes and string to divide the site into measured units. This forms a **grid**, which helps the archeologist keep accurate records of exactly where things are found. Only then is the archeologist ready to excavate.

AN IMAGINARY ARCHEOLOGICAL SITE

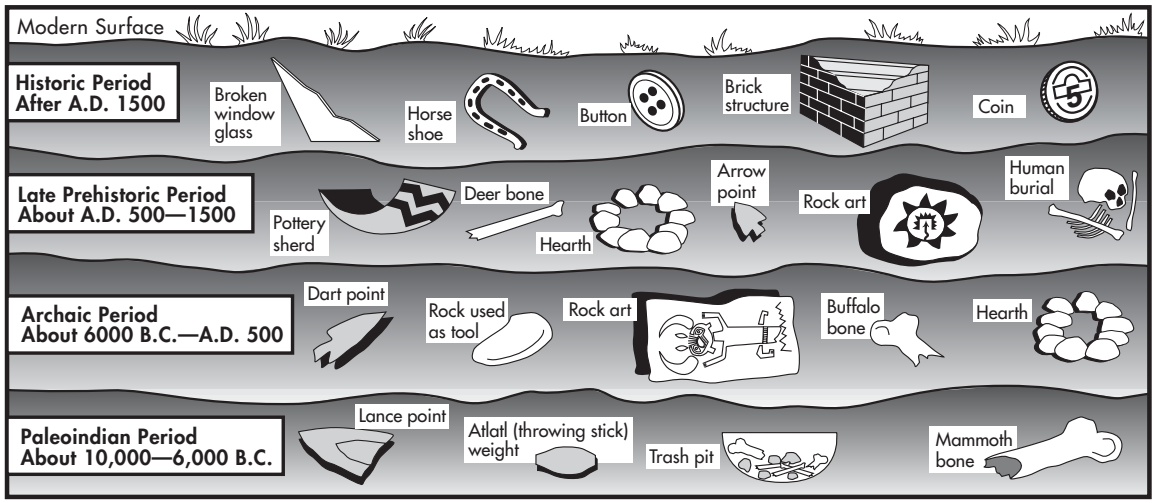
The science of geology teaches that the surface of the Earth is constantly being changed by two major processes: deposition and erosion. Since the end of the last Ice Age (about 12,000 years ago), the land surface of most places in North America have been changed by the deposition of soil.

Soils have been deposited by being blown in the wind and by being carried by flooding rivers. Since the land surface has been building up because of these soil deposits, the older an archeological site is, the deeper it will be. If the same place has been used by people during different time periods, the site may be deposited in strata (or layers). In a stratified site, the older the stratum, the deeper it will be.

There are a few archeological sites in Texas where people have left cultural remains from Paleoindian times through the Historic period. In the imaginary archeological site shown here, the layers of soil contain remains from all of the major prehistoric periods and historic times as well. A site like this can help us understand the differences between cultures in different time periods.

As you look at the layers in the imaginary archeological site, remember that some things used by early people were also used by later people. The same kinds of cultural materials may be found in strata from different periods. For example, burned rock from a **hearth,** which is shown here in the Archaic, could also be found among Late Prehistoric and Historic Indian cultural remains—or even at a modern picnic site. That is why it is so important to study artifacts in association.

Trained professionals carefully document even tiny pieces of material as they are found in a site. Each site and its remains leads to new conclusions, or supports previous conclusions, about the history of Texas.



Examples of artifacts associated with the four archeological time periods in Texas.

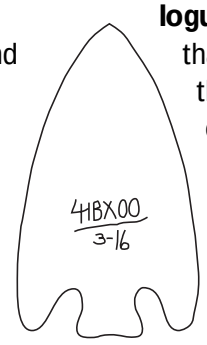
The archeologist digs in a grid **unit,** in carefully measured levels downward.

The archeologist is not just looking for artifacts but is studying changes in the soil and other clues in the site. Artifacts alone cannot tell us about the lifeways of past cultures. For an artifact to be part of the story of the past, we have to know exactly where it was found and what other things were found with it.

Ashes in the soil show where a fire once burned. A place where many flint flakes are found can tell where tools were made. The decayed remains of a post may show where a house once stood. If the site was occupied by different people over time, these occupations may be shown in different levels of the site.

Archeologists take **special samples** of soil to study. The soil contains pollen from plants, bits of charcoal, and other material. These are clues that help to date and identify the people who lived at the site.

Artifacts are mapped as they appear in place in each level. The dirt that is removed from each level of each unit in the grid is sifted through a wire screen. If the dirt is hard and clumpy, running water may be used to help in screening. Small objects (such as flakes of flint or beads) are trapped on the screen as the dirt falls through. The archeologist makes complete and careful notes on each level throughout the excavation.



This is a catalogued dart point. Above the line is the site number. The number 3-16 below stands for Lot 3 (in Unit 1A), specimen 16.

Stone tools and other artifacts often are found where they were left long ago—but they may now be covered by several feet of dirt. Artifacts are uncovered by careful digging with a trowel and brush. A broken projectile point or a fragment of a pot is just as important as a whole artifact. Much can be learned from artifact fragments if they are excavated properly.

An artifact that is discovered in place in the ground is carefully mapped, recorded, and placed in a labeled bag. (The term **in situ** means finding an artifact in place.) The label on the bag shows the site number, when and where the object was found, and who found it. The small objects found on the screen also are bagged and labeled according to the unit and level from which they came.

When archeologists find an artifact, they ask questions:

- How did this get here?
- When was it made?
- What was it made from?
- How was it made?
- How was it used?
- What objects were found with it?
- Which cultural group made it?
- Why was it discarded?

Archeologists are specially trained to search for the answers to these questions.

Writing the Report

When the excavation is finished, the artifacts, special samples, and records are taken to a laboratory. The artifacts are washed and **catalogued.** Each object is given a special number that tells exactly where it was found. Then the archeologist studies the artifacts and other clues to find out what they can tell us about the way a group of people lived hundreds, or even thousands, of years ago. The archeologist asks other scientists to help in the search to understand the people of long ago. **Geologists**, who study the history of the earth itself, have helped to study the Bering Strait land bridge and other geological changes that affected prehistoric people. **Paleontologists**, who study fossils, have helped to study the extinct animals that were killed by early hunters. **Botanists**, who study plants, have helped to identify the plants that people gathered.

Besides studying the material remains from the site, the archeologist must compare the remains to those from other, related sites. Research, analysis, and writing may take a few months to several years. The time it takes

depends on how much of the site was excavated and how much information was found in the site.

Finally, the report is completed and published. The archeologist must then arrange for permanent **curation** of the artifacts so that other scientists will be able to use them. These other scientists may want to test the conclusions of the archeologist's report or use the artifacts for **comparative analysis**.

The Results . . .

Much of the work of archeology is routine but the results are fascinating. And the results are not merely descriptions of artifacts but of how people lived long ago. When we can at last visualize a small group of Paleoindian hunters driving a herd of giant bison over a cliff for the kill, or the women of Archaic times patiently grinding seeds into meal for food, or a Late Prehistoric Caddoan family constructing and thatching their beehive-shaped house—that is archeology.

Please join us in protecting and preserving the archeological sites that contain the clues to those vanished, long-ago lifeways.

How Archeological Sites Are Destroyed

Archeological sites are **non-renewable**. We cannot rebuild or replace them. Once a site is destroyed, the information that it contained is gone forever. We cannot put back into sites the seeds or pollen of long-ago plant foods or the bones of extinct animals. In Texas thousands of sites are damaged or destroyed each year.

When a site is scientifically excavated, it is permanently recorded and explained for all of us, even when the site is no longer there. The archeologist is preserving the history of people who left no written record.

Archeologists do not want to excavate all archeological sites in Texas. They try to save as many as possible for future generations to study and learn from. However, not all sites can be preserved. What causes archeological sites to be destroyed?

The Forces of Nature

Sometimes **natural forces** destroy sites. Flooding can wash away a site near a river's banks. The wearing away of soil on a hillside can scatter the remains of a site. A rock slide in a canyon might destroy a rockshelter where Archaic hunters once camped. Chemicals and water in the soil can cause objects to disintegrate. Many of the objects used by prehistoric people were not made of long-lasting pottery or stone. Archeologists call artifacts made of bone, wood, animal skins, or plant fibers perishable artifacts because they are so often destroyed by natural forces.

Sites cannot always be protected from destruction by natural causes. Archeologists try to identify important sites that are in danger. These sites are excavated if possible, since they cannot be preserved.

Human Activities

Many sites are damaged or destroyed by people simply because they do not know any better or do not care. Curious people may dig up artifacts from a site and carry them away to show to their friends. Farmers plowing fields or contractors digging foundations for new buildings may destroy sites accidentally. And, unfortunately, some people are just plain **pothunters** or commercial relic collectors. They destroy sites by digging for artifacts to sell or trade This will be stopped only when *everyone* refuses to buy or trade artifacts.

Archeologists are trying to teach people how to protect archeological sites. Many people are concerned about preserving their heritage. As individuals, they can report to the state archeologist if they find an archeological site. They also can join archeological societies or historical organizations so they can work with others. There are

groups all across Texas that work to save archeological sites from destruction.

The population of Texas is increasing greatly every year. Cities are growing—new houses and factories are being built in what were once open fields or wooded areas. Man-made lakes are created to provide water and recreation for the growing population. Highways are built to accommodate more cars and trucks. Coal is mined and oil wells are drilled to produce fuel for our growing energy needs. Each of these activities causes changes in the land. And anything that causes changes in the land can destroy archeological sites. Because not all sites can be protected, we must try even harder to preserve important sites that can be saved.

APPLYING YOUR KNOWLEDGE

How does a site end up underground?

How might a site be discovered?

What is the best thing to do if you find a site? Why?

What are some other natural causes that might damage archeological sites?

Name some other activities of people that might damage archeological sites?

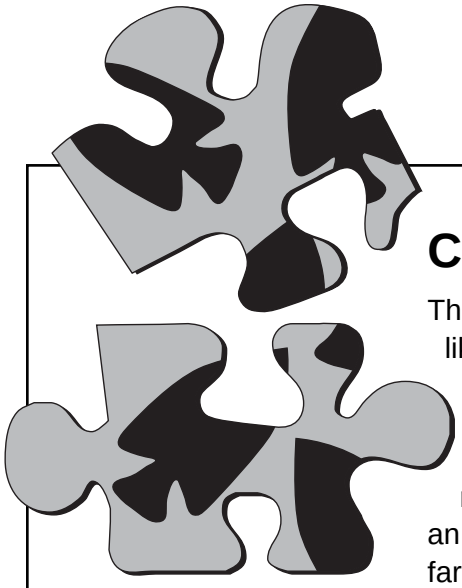
Name some ordinary things that you use every day. These objects are artifacts of the present.

- Which of these common objects would be *perishable* artifacts?
- Which ones would survive in an archeological site?
- Name some other things that would slowly disappear if buried in an archeological site.

A single artifact can be a critical piece of the puzzle of the past. What happens if someone picks up that puzzle piece and removes it?

Why are assigned numbers useful in keeping records? What are some other things besides archeological sites that are numbered so records can be kept? A driver's license number is one example.

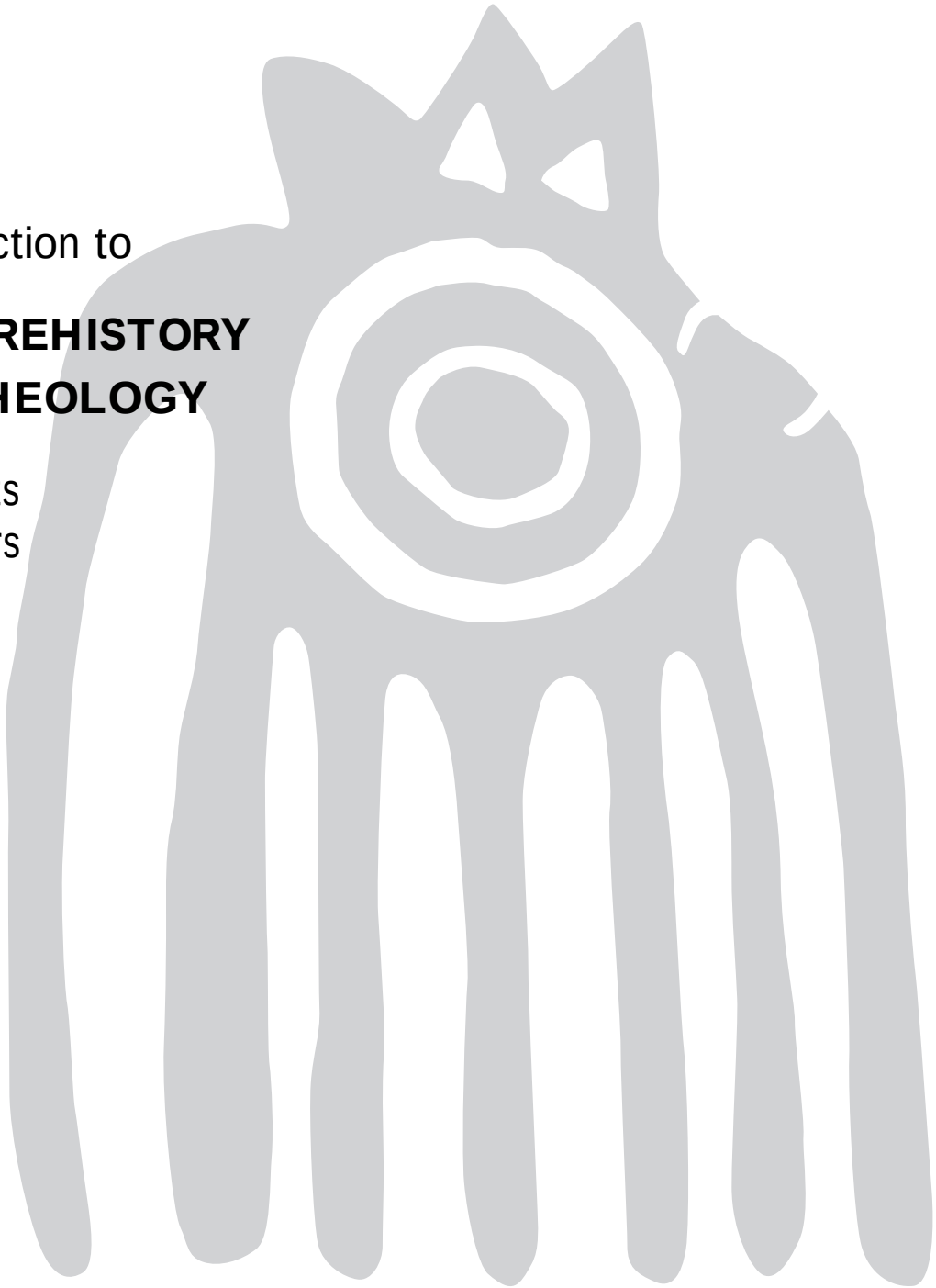
Why is it important for us to learn about past cultures?



Clues to the Past

The artifacts and other remains in an archeological site are like the pieces of a jigsaw puzzle. Stone chips and arrowpoints near a hearth can show us where prehistoric people once made their tools. BUT both of those pieces of the puzzle must be there, and they must be placed in the rest of the puzzle. Is this a puzzle that shows a village or an overnight campsite? Were the tool makers hunters or farmers? Each time a piece of the puzzle is removed, our picture of the past remains incomplete forever.

The Indian Years



An Introduction to

TEXAS PREHISTORY and ARCHEOLOGY

for Students and Teachers

BOOKLET B

Adapted from
The Indian Years

Archeology Divison
TEXAS HISTORICAL COMMISSION
Austin 1998

Preface

This section, or "booklet," entitled "The Indian Years" is intended as an introduction to prehistory and the Native American cultures of Texas for teachers and students (primarily grades 4 through 7). Teachers may photocopy without permission any or all of this section for classroom use only. Other use of this material requires permission from: Archeology Division, Texas Historical Commission, P.O. Box 12276, Austin, TX 78711-2276.

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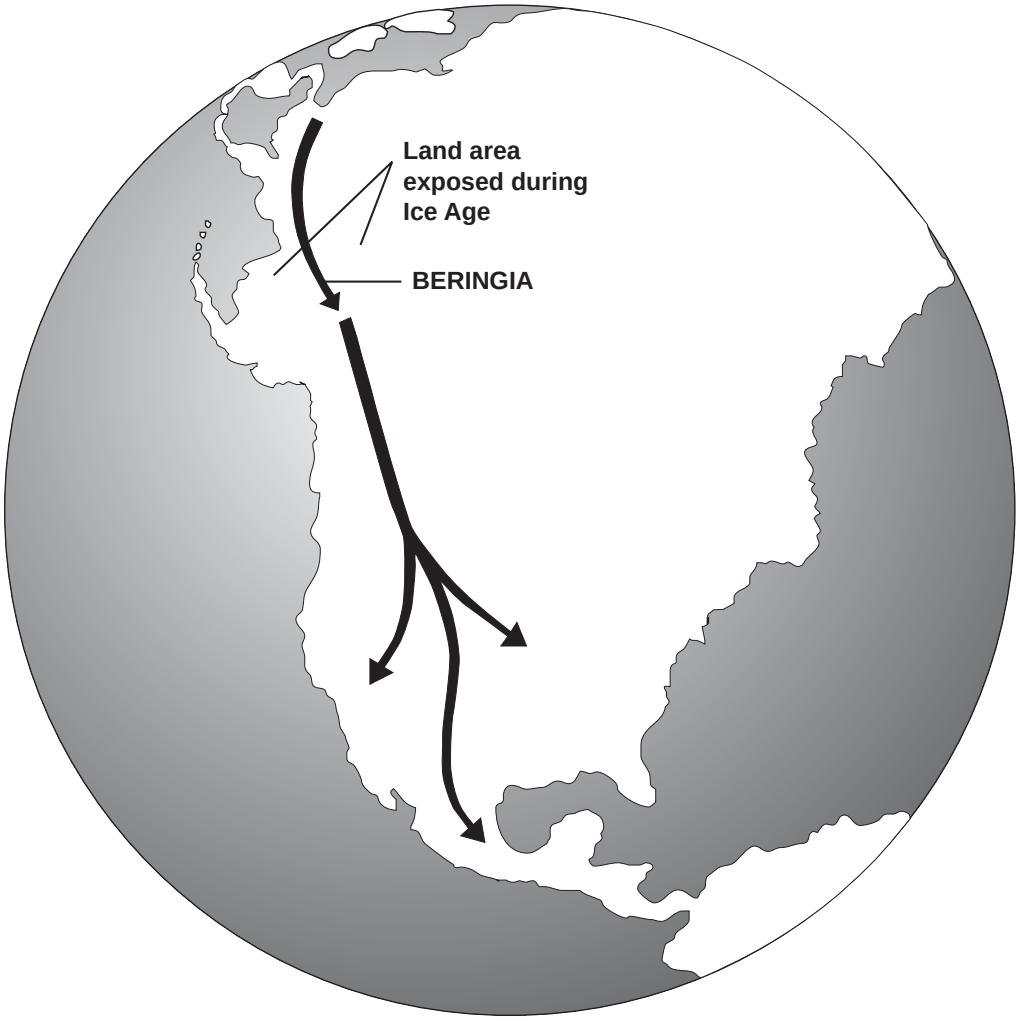
Although this material is intended primarily for young readers, the basic concepts have been widely used to introduce prehistory to both older students and adults. Teachers may thus consider using this material either as text to be assigned for reading or as background for classroom presentations for older students.

This material should serve as background information for all of the classroom activities relating to prehistory in Part II of this unit for teachers. Those who want more information should see the list of basic books in Part III.



Paleoindian Pioneers (10,000–6,000 B.C.)

How North America Was Settled

During the last great Ice Age, much of the earth's water was frozen in huge masses of ice called glaciers. As the sea water froze, the water level of the seas lowered. About 40,000 years ago, a wide strip of land between Asia and North America appeared above sea level. This land connection between Siberia (in Asia) and Alaska (in North America) is called the Bering Strait land bridge.

On the land bridge both animals and people could cross from one continent to another. The land bridge was so big—more than 600 miles across at its widest point—that it looked no different from the lands that it joined. The land bridge was so large that scientists have given it a name of its own, "Beringia." About 13,000 years ago, the glaciers began to melt, and the sea level rose, once again covering Beringia with sea water.

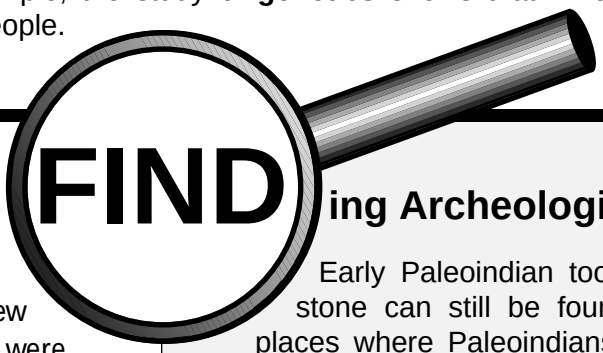
While the "bridge" existed, big-horned **bison**, shaggy mammoths, sabertooth tigers, and other animals crossed into North America. Archeologists believe that **prehistoric** people in Asia followed the herds of animals across the bridge. These long-ago hunters are called **Paleoindians**.

Archeological Ideas about the Land Bridge

Archeologists are scientists who learn about the past by studying the remains that people have left behind. Most of these scientists believe that the first prehistoric people arrived in North America about 13,000 years ago, just before the land bridge disappeared under the ocean.

Some archeologists think that people may have entered North America even earlier. And some archeologists believe that not all people who came to the New World thousands of years ago came across the land bridge. These scientists think that a few people may even have arrived by boat. However, most archeologists believe that the earliest arrivals crossed the land bridge and then spread out across the New World.

Studies by other scientists also support the belief that our earliest settlers arrived from Siberia. For example, the study of **genetics** shows that American Indians are related to Asian people.



The First Americans

Paleoindians were not seeking a new land when they crossed the bridge. They were following the animals because hunting was the best way to get food. The summer was so short and the climate so cold that people could not depend on a year-round supply of food from plants.

When Paleoindians arrived in North America, they found a good supply of food in a land where no people had lived before. Because there was plenty of food, their population grew. As the population in an area grew, the supply of food would become too small to feed all of the people. Small **bands** of people were forced to move into new areas to find better hunting grounds.

Small groups of Paleoindians moved south at different times. They kept close to the animal trails, which were along paths that were free of ice. These trails led to water, protected river valleys, and mountain passes.

Not all bands followed the same paths as they moved south. Some people branched off and followed river valleys to the east. Some followed mountain passes through the Rocky Mountains to the west. Still others continued to move south until they reached South America—more than 10,000 miles from the land bridge. And some people stopped in the place we now call Texas.

ing Archeological Sites

Early Paleoindian tools made of stone can still be found in some places where Paleoindians hunted or camped. In Alaska and Canada, Paleoindian sites have been found along the foothills of the mountains. Scientists who have studied the locations of these sites believe that early people followed a path along these mountains and then across the continent.

Artifacts or other **cultural remains** are found in the places where early people once lived or worked. A place that contains these remains is called an **archeological site.** All that we know about prehistoric Texas has been learned from the scientific study of archeological sites.

The First Texans

People first came to Texas about 12,000 years ago. These Paleoindian pioneers banded together in small groups and moved from place to place in search of food. People who move from place to place in search of food are sometimes called **nomads.** Each group may have moved around in the same large area year after year.

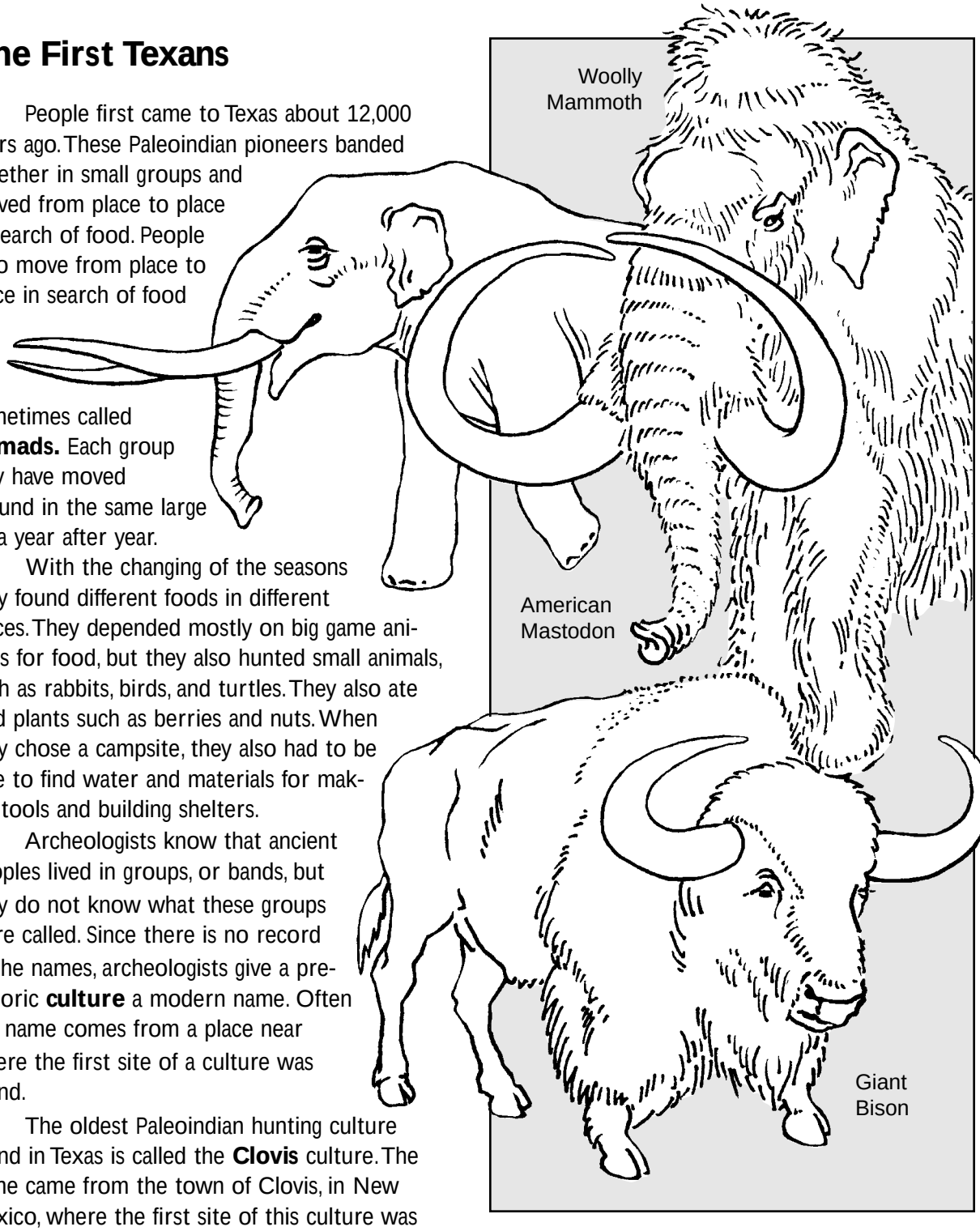
With the changing of the seasons they found different foods in different places. They depended mostly on big game animals for food, but they also hunted small animals, such as rabbits, birds, and turtles. They also ate wild plants such as berries and nuts. When they chose a campsite, they also had to be able to find water and materials for making tools and building shelters.

Archeologists know that ancient peoples lived in groups, or bands, but they do not know what these groups were called. Since there is no record of the names, archeologists give a prehistoric **culture** a modern name. Often the name comes from a place near where the first site of a culture was found.

The oldest Paleoindian hunting culture found in Texas is called the **Clovis** culture. The name came from the town of Clovis, in New Mexico, where the first site of this culture was discovered. Clovis people ate plant foods, but hunting was very important to them. One of their most important tools was the **projectile point**. The most distinctive of these is a spear point that is called the Clovis point.

Spear points used by Clovis people have been found at sites where they killed a species of elephant called **Elephas columbi**, which is now extinct.

The Miami site, the first Clovis site to be discovered in Texas, is located near the town of Miami, in the Panhandle. There, archeologists found Clovis points with the remains of at least five mammoths.



What are

CLOVIS

FOLSOM

PLAINVIEW

Projectile Points?

The sharp, pointed stone hunting weapons made by American Indians are often called arrowheads or arrowpoints. Archeologists call this group of weapons **projectile points**. Projectile points can be compared to bullets: not all bullets are made for rifles, and not all projectile points are for arrows. Most of the points made by Paleoindians and Archaic people were used as dart or spear points. Arrowpoints come late in the history of American Indian hunting weapons.

Projectile points cannot be made from just any rock. A hard stone that can be worked, or flaked, is needed to make a good point. A soft stone, like chalk, that crumbles easily would not make a very good point. Most projectile points in Texas were made of **chert**. This stone is found in many colors, from gray to pink and even purple. Projectile points can be beautiful as well as deadly weapons.

Archeologists know that Indians traveled to places where good stone could be found and then carried pieces to their camps to be made into weapons or tools. Stone-source sites—the places where good flint could be found—are also called **quarry** sites.

One stone-source site in Texas is so famous that it is a national monument. For thousands of years people acquired Alibates **agate** from a place near the town of Fritch in the Texas Panhandle. That site is now Alibates National Monument.

Dating Paleoindian Sites

Many of the animals that Paleoindians hunted are now extinct. Knowing when the mammoth, camel, and large bison became extinct helps the archeologist to learn the dates of Paleoindian sites.

At the Plainview Paleoindian site, near Plainview, Texas, archeologists found 18 Plainview points and the remains of at least 100 large bison.

The places where archeologists have found many animal bones and stone weapons are called **kill sites**. Finding the bones of extinct bison or mammoths and ancient weapons in **association** tells scientists that a kill site dates from Paleoindian times.

Early Paleoindians hunted in organized bands. A group of hunters could attack a herd of animals and drive them into a canyon where other hunters waited. The waiting hunters would have their weapons ready for the kill.

Bands of hunters would also drive herds of large, fearsome bison over bluffs and then finish off any of the animals that were not killed in the fall. This kind of hunting is called the jump method. Sometimes hundreds of bison were killed at one time.

After the Clovis Culture, the next group of prehistoric big-game hunters is called the **Folsom** culture. The people of this culture made a spear point that is called the Folsom point. The Folsom people lived on the plains and in the forests of Texas. They were especially good at hunting a big bison called **Bison antiquus**. This big animal is now extinct.

After the Folsom culture came another hunting group we call **Plainview**. The Plainview people made tools of a different style from those made by the Clovis and Folsom people. The style of their tools had changed, but the Plainview people still wandered after the animals they hunted just as their ancestors had done.

Spear points were not the only stone tools made by Paleoindians. They also made and used knives, scrapers, gravers, drills, awls, and other tools. Gravers were used to cut holes in hides or engrave slots in bones or antlers.

One of the most interesting tools of the early hunters is the **atlatl,** or spear thrower. The atlatl helped hunters to throw their spears harder and farther. The atlatl worked in much the same way that a sling shot is used to throw a rock.

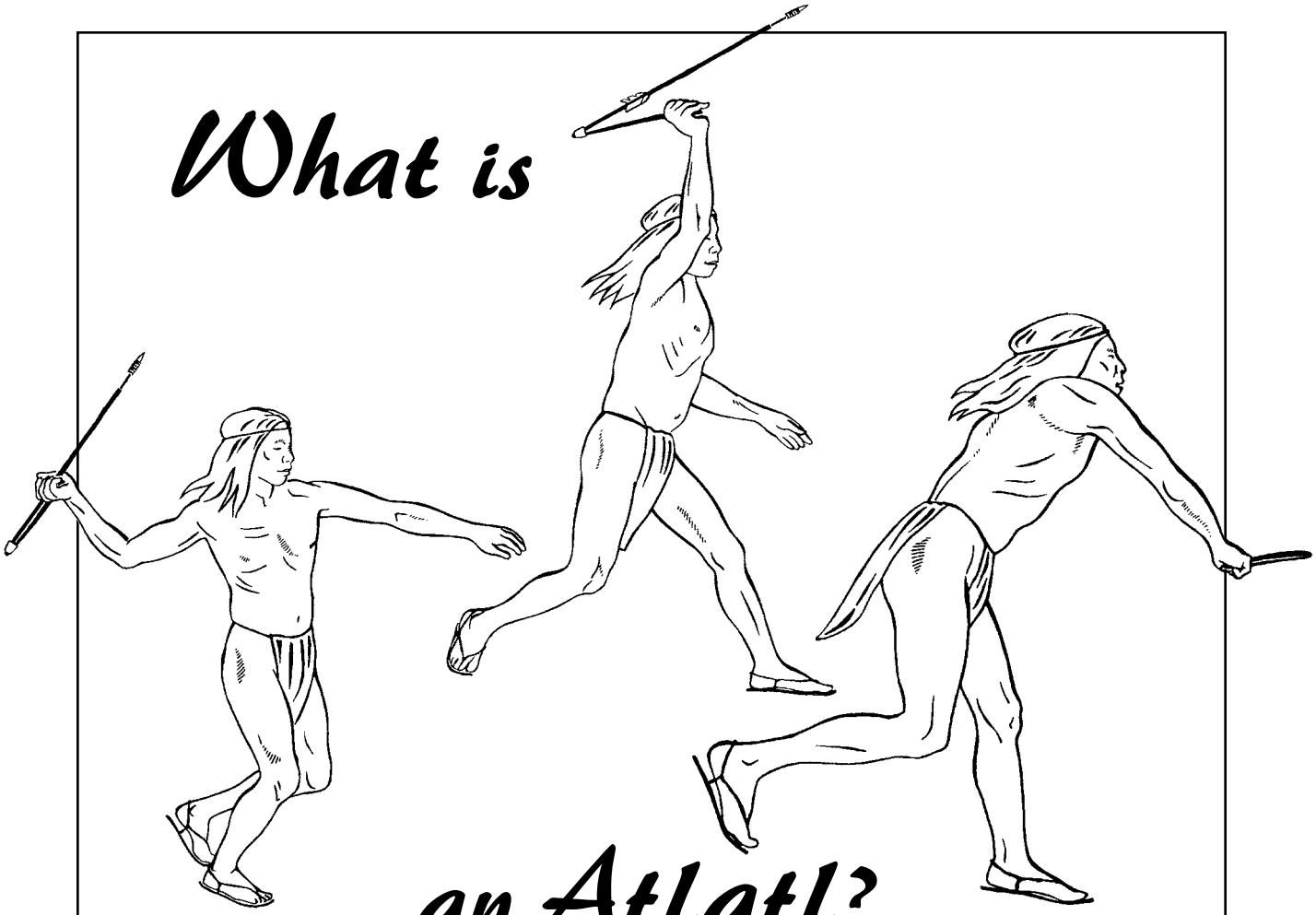
In addition to stone tools, the **material culture** of the Paleoindians also included the use of fire, clothing, and shelters. However, many of the major sites that have been studied are kill sites, and much of what is known about Paleoindians is related to hunting methods, projectile point styles, and butchering tools and techniques.

Paleoindian sites are very important because archeologists still need to find and study campsites that can tell us more about how the people lived. Studies at the Lubbock Lake site near Lubbock, for example, show that the Paleoindians relied on many different resources provided by the natural environment.

Nevertheless, as the climate became dryer and big-game animals became extinct, Paleoindians had to adapt their lifeways to changing conditions. These gradual cultural changes led to a new period of prehistory—the Archaic.

Drills like this one were made by Paleoindians and were used to drill holes in bone, wood, or other materials. This drill was made by re-shaping a Dalton projectile point. Dalton points were one of several types of dart or spear points made late in the Paleondian period. (The drawing is about 2/3 actual size.)

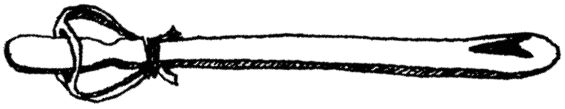
What is an Atlatl?



Archeologists have recorded the use of the atlatl in Australia and Africa, as well as in America. The atlatl, or spear thrower, made hunting with spears more effective than using a spear alone. Using the atlatl, a hunter could throw his spear or dart hard enough to kill big game from a short distance. Prehistoric hunters in North America must have found that killing a large bison from a distance was a lot easier—and safer—than having to creep up on the animal and stab it with a hand-held spear.

Archeologists do not know whether the American Indians invented the atlatl themselves or brought it from Asia. We believe that the spear thrower was used on the North American continent more than 10,000 years ago. Hunters continued to use atlatls in later Archaic times. After the discovery of the bow and arrow, most groups preferred the new weapon. However, Spanish explorers saw the atlatl still being used in the mid-1500s.

Usually the stone dart tips and the weights used on atlatls are all that remain to show that this weapon was used by ancient hunters. Material that is soft, like the wood in the handle of a spear or an atlatl, usually rots unless it is in a very dry, protected site.



APPLYING YOUR KNOWLEDGE

Are there still glaciers today? If so, where are they located?

Some of the animals that traveled from Asia to America across the land bridge are now extinct.

- Name some animals that live today that are in danger of becoming extinct?
- Which almost-extinct animals are still hunted for food or fur by people today?

How does climate still affect the foods that are available to people?

Name some fruits, vegetables, and nuts that are "in season" during different times of the year. (One good example is the pumpkin, which is in season just in time for Halloween.)

Why is Thanksgiving a fall holiday instead of a spring or summer holiday?

During which season of the year would you have better luck hunting animals than gathering wild plant foods?

How does transportation affect the foods that are available to people? If you had to walk from one camp to another, how would it affect your decisions to store or carry large supplies of food?

What wild animals are still hunted for food in Texas?

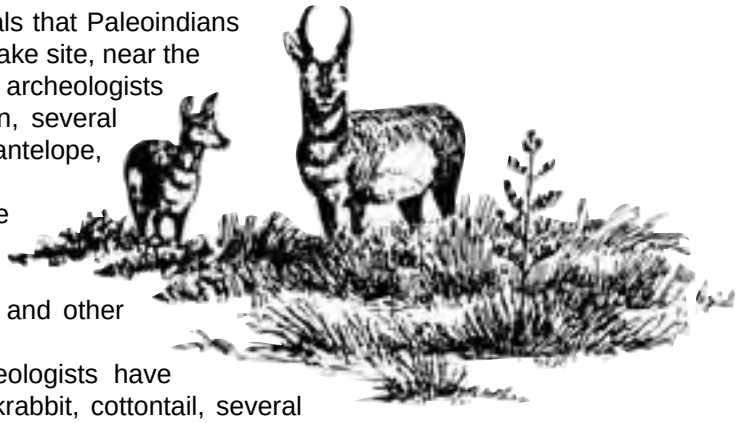
"What is missing?" is an important question for archeologists.

- What is missing when a stone spear point is found?
- What things that we use today would not last long if they were left in the ground for many years?
- How would the survival of things we leave behind us affect the way future archeologists interpret our culture?

What's for dinner?

Through thousands of years, from now-extinct mammoths to bison, Paleoindians hunted big game. But large roast beast was not the only meat being cooked over their dinner fires.

Clues to the many kinds of animals that Paleoindians ate have been found at the Lubbock Lake site, near the city of Lubbock. In one area at the site, archeologists found the bones of at least six bison, several muskrats and ducks, a pronghorn antelope, and a deer.



The ways in which the bones were broken and cut marks on the bone showed that the animals had been butchered. And two Plainview points and other stone tools also were found there.

In other areas at the site archeologists have found the bones of snow goose, jackrabbit, cottontail, several kinds of ducks, grouse, and other small animals.

Archaic Hunters and Gatherers

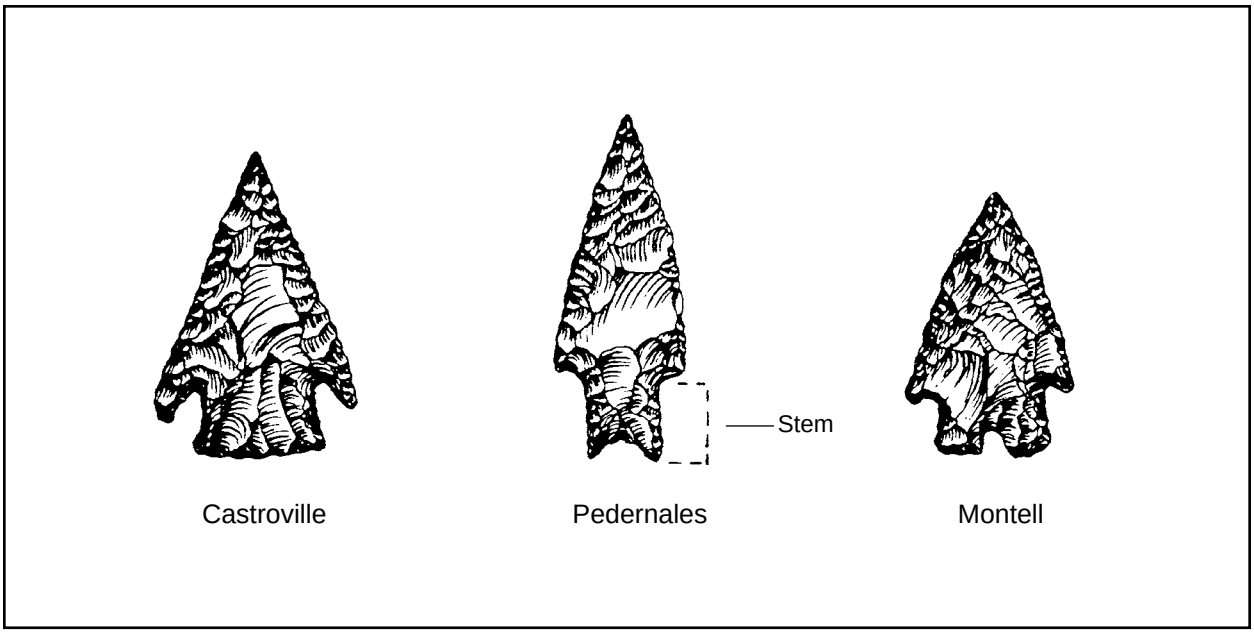
(6,000 B.C.–A.D. 500)

About 8,000 years ago (6,000 B.C.) the basic lifeways of people who lived in Texas began to change. Archeologists call this new period the **Archaic** period. This period is often divided into the Early, Middle, and Late Archaic. During this period the population continued to grow, and there were more people than there had been during the Paleoindian period. They began to make and use many different kinds of tools.

There were many reasons for the changes from Paleoindian to Archaic lifeways, and most of the changes came about slowly. For example, changes in the climate caused differences in the animals and plants that were available for food. Changes in the plants and animals that were hunted or gathered caused people to develop new kinds and styles of tools.

In Paleoindian times as the population grew, bands could just move to a new territory. As the population became even larger, people became more territorial. That is, the nomadic groups moved about from season to season in the same territory. The territories of Archaic groups were probably smaller than the large areas in which their Paleoindian ancestors had roamed.

Archaic people still organized themselves in bands as their Paleoindian ancestors had done. Each band had a "home range" that covered a fairly large territory along a river or within reach of some other water sources.



Castroville, Pedernales, and Montell are only three of many different styles of dart or spear points made by Archaic people. The narrower part below the notches at the base is the stem.

Within this range, the band moved from place to place following the food supply as it changed from season to season. Some of the places where they camped were used again and again over the years, as long as the food supply and water sources were good near the camp.

The projectile points that Archaic people made for hunting are different from the early Paleoindian points. Instead of making only a few **types**, as earlier people had done, Archaic flint workers made many different styles.

Archaic people made many tools besides projectile points, and they developed many skills. Making baskets and mats of plant fibers was an important skill. They made net carrying frames and baskets of plant fibers and used them for carrying the foods they gathered. The remains of baskets and other goods made of fibers are rare in most archeological sites, but they have been found in the dry caves of southwestern Texas.

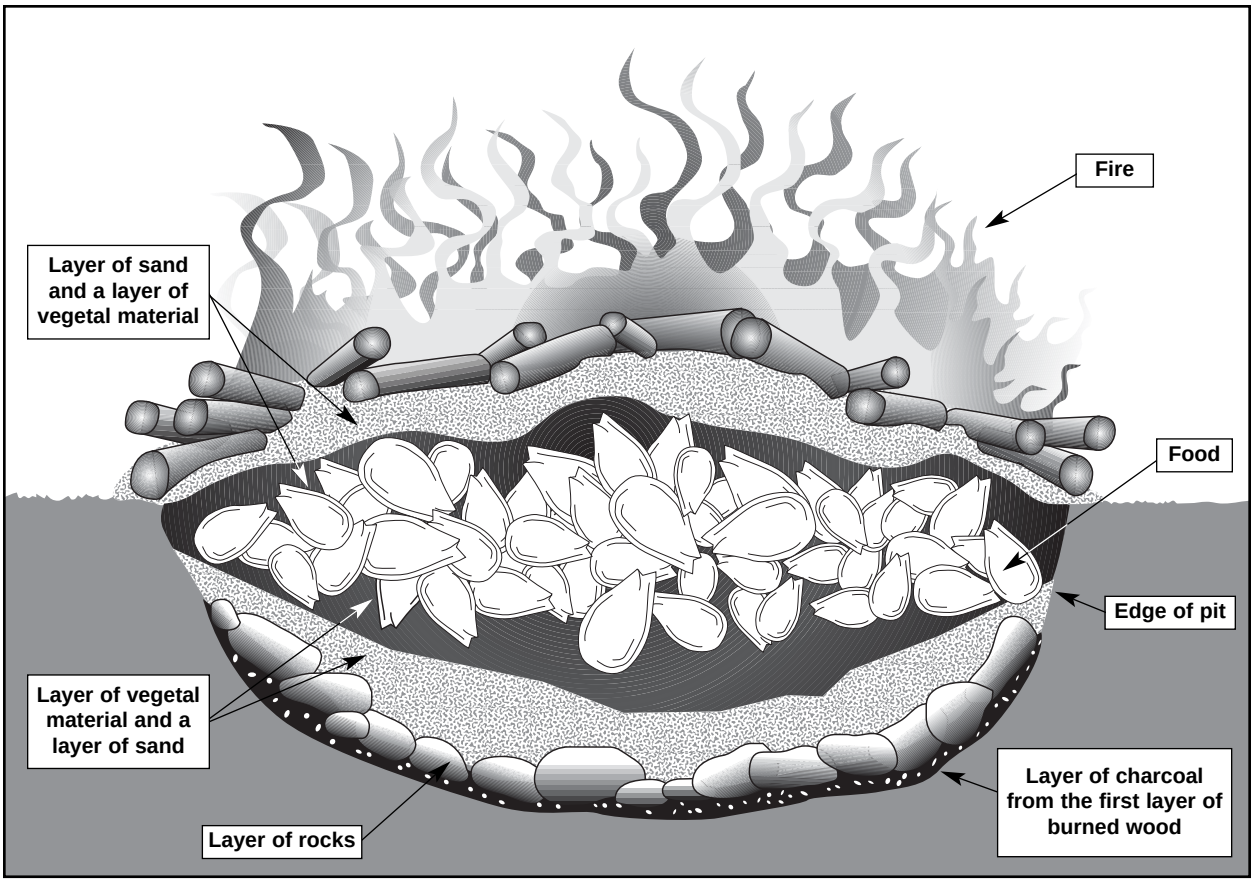
The Archaic Diet

During Archaic times, people depended less on large animals and more on plants and smaller game animals for a food supply. The large game animals that Paleoindians had hunted were now extinct. A smaller kind of bison and rabbits, deer, and antelope were important foods for Archaic people. Even nutritious insects, such as grasshoppers, were part of the Archaic diet.

Plant foods were an important part of people's diet in Archaic times. Mesquite beans, pecans, walnuts, grass seeds, wild fruits (such as persimmons), the fruit of prickly pear, desert plants like **sotol** and **agave,** and many other kinds of nuts, seeds, and roots were eaten. Archaic people made tools of stone to grind seeds, nuts, and roots into an edible form.

Stone grinding tools called the **mano** and **metate** are found at almost all Archaic sites. Seeds and nuts were ground by rubbing a hand-held stone (a mano) over a metate (on the ground). Prehistoric people also used large wooden or stone pestles to pound foods in mortars (or holes) in slabs of exposed bedrock.

Grinding could be very important in preparing foods. For example, acorns that are ground into meal and soaked in hot water can be eaten almost at once. If whole acorns are soaked in cold water, they must be soaked for months to remove the acid that makes them taste bitter.



This is a profile, or cross section, of an earth oven.

Making and using an earth oven: (1) dig a pit; (2) line the pit with wood; (3) light a fire to burn the wood and heat the pit walls; (4) line the pit by adding stones over the ashes and charcoal; (5) cover the hot stones with sand and a layer of vegetal material (such as grass and leaves); (6) place layers of the food to be cooked on top of the vegetal material; (7) layer vegetal material over the food and cover it with sand; (8) build a fire on top to heat the layers in the oven and cook the food. When pits like this one were opened, the stones that had been used were discarded around the pit. Archeologists call these areas of discarded stone, ash, and other remains from baking ovens "burned rock middens."

Cooking the Archaic Way

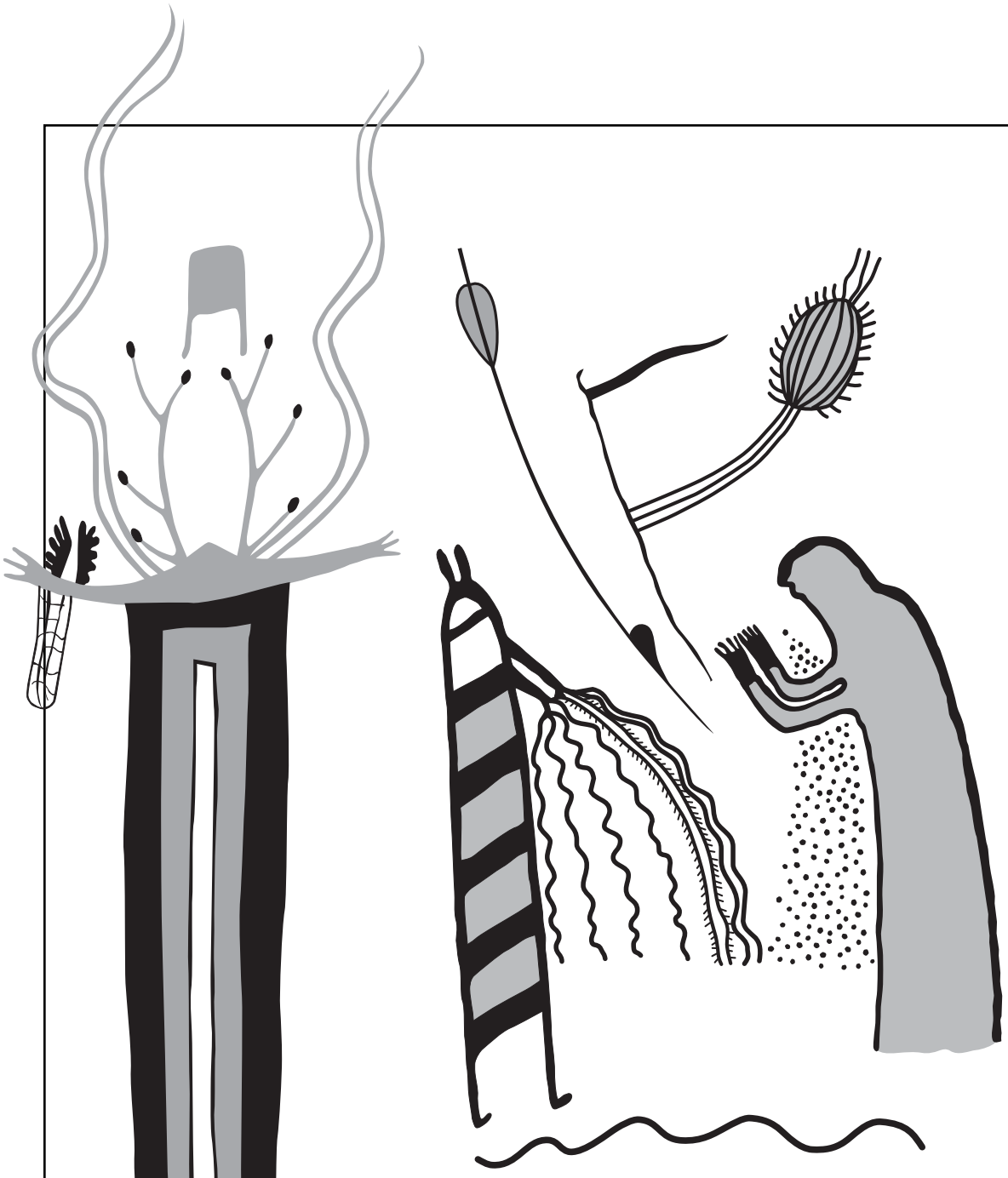
Prehistoric Texans often baked plant roots in pit ovens. A pit was dug in the ground, and a large fire was built in the pit to form a layer of hot coals. Rocks were laid over the coals, and then the rocks were covered over and the food was added. Then the food was covered over and another fire was built. After about 48 hours, the pit was opened and the plants were ready to be eaten or ground into meal.

As the same pits were reused, the stone slabs lining the pits would break up because of the repeated use and intense heat. Before the cooking pit was used again, the rocks that had broken would be thrown out and replaced. As the pit was used over and over, a mound of burned and broken rock would pile up nearby.

Archeologists call these mounds of accumulated stones **burned-rock middens**. Burned-rock middens are a common type of Archaic site in central Texas, and they are found also in other parts of the state

Archaic Shelters

Archaic hunters and gatherers often camped in caves and rockshelters. They also built shelters at some camp sites. Archeologists have studied the materials that would have



Archaic Rock Art

Archaic paintings and designs etched into stone have been found on boulders and on the walls of caves and rockshelters in Texas. **Shaman** figures in ceremonial masks and robes are common in pictograph sites in far western Texas. A shaman was a religious leader, or medicine man. Archaic people, in addition to painting shamans, included many other human and animal figures in their rock paintings and etchings. Hunting scenes often include the horned animals, such as bighorn sheep, deer, and antelope. Abstract designs, such as wavy and zigzag lines or geometrical shapes, also are common.

been available to Archaic builders. Archeologists have also studied the kinds of shelters built by people of recent times who lived by hunting and gathering.

Based on this research, archeologists believe that Archaic people built a framework of poles and stretched animal hides over it or thatched it with grasses and tree branches. No shelters made by Archaic people have survived. Only clues buried in the earth remain at their camp sites.

What Archaic People Wore

Clothing and footwear of prehistoric times were made of materials such as animal skins and plant fibers. Simply woven textiles of fur and plant fibers were made and used much as we use cloth today. Clothing and covers were also made from animals skins. People wore sandals that they made of plant fibers. In winter, they may have wrapped animal hides around their feet and legs.

No remains of clothing have been found in sites that are earlier than the Archaic period. Only in protected sites (such as dry caves and rockshelters) are the remains of clothing and sandals found. Many items made of plant fibers and wood have been found in Archaic sites in dry rockshelters and caves in southwestern Texas. A few items have even been found in well-protected rockshelters in central Texas.

Because most clothing was made of perishable materials, we know little about the styles of prehistoric clothing. It is known that prehistoric people in Texas depended mostly on worked animal skins for clothing. Bone needles and awls used in sewing the skins have been found. Processing skins was an important task throughout the prehistoric period. Stone scraping tools that were used in preparing the hides are common in prehistoric sites.

The clothes that people wore in the warmer months may have been very simple. For example, men probably wore **breechcloths,** or **loincloths.** When the weather was cold, people may have added robes or "blankets" of bison hides or other furs over their usual clothing.

Most of the ideas we have about what prehistoric people in Texas wore are based on the types of tools that have been found (scrapers, awls, and needles) and on the remains found in dry, protected sites. Beads and pendants of stone, bone, and shell also have been found in archeological sites. These tell us that personal ornaments were important to prehistoric people, just as they are to people today.

APPLYING YOUR KNOWLEDGE

How many kinds of seeds do you eat? Make a list.

How large is your "home range" (the area that you move around in, in your everyday life)?

- What places—house, grocery store, and others—are included in your home range?
- Would your home range be smaller if you could not ride in cars or buses?

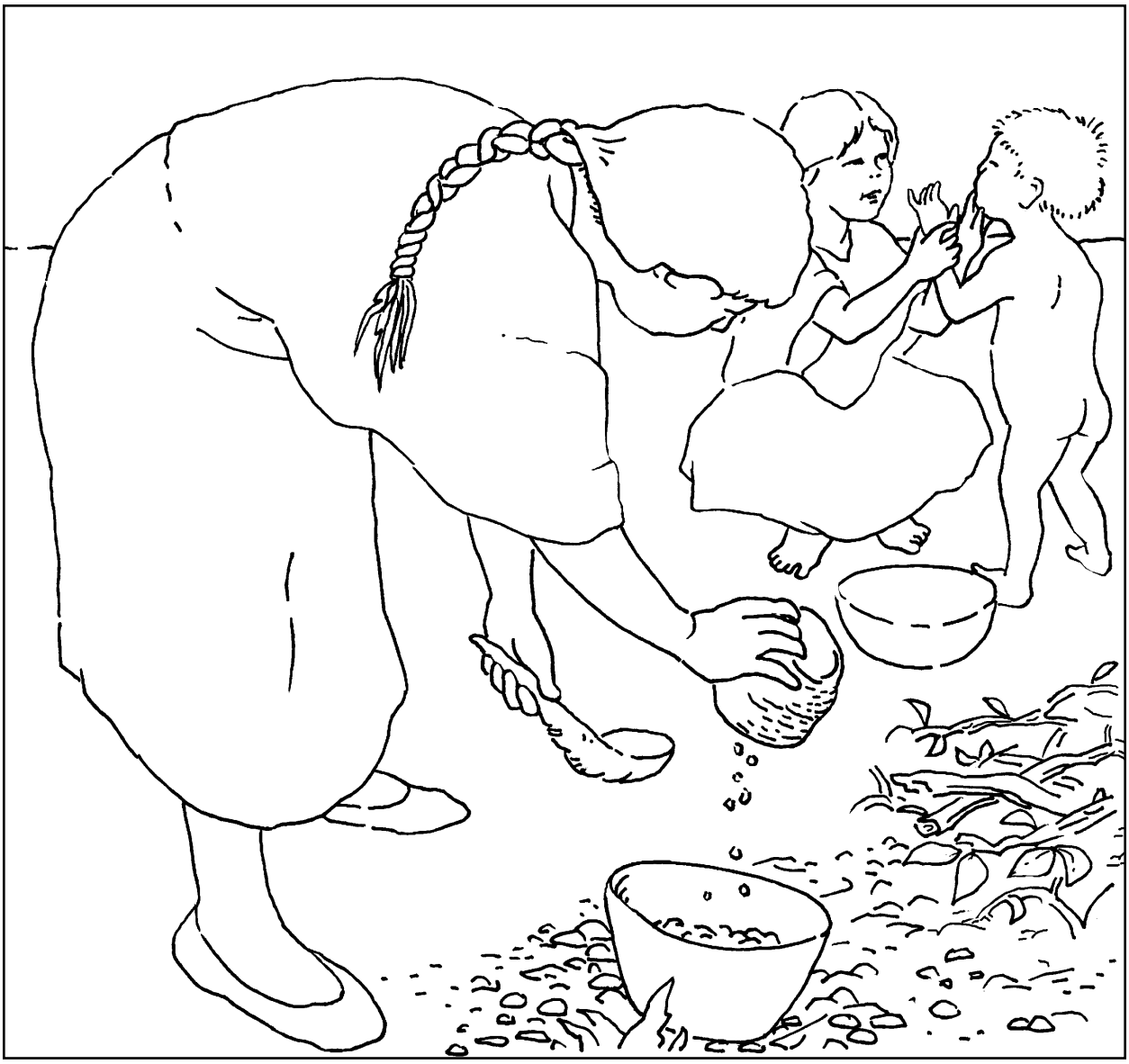
What are some modern methods of processing food to preserve it for eating later? Dried fruit is one example.

A source of water is very important to people and animals.

- Do most people in the world today have to live close to a natural water source? Why or why not?

What resources do you think Archaic people would need in a camping area?

- Would they have different needs for an overnight camp and a camp where they stayed for several months?



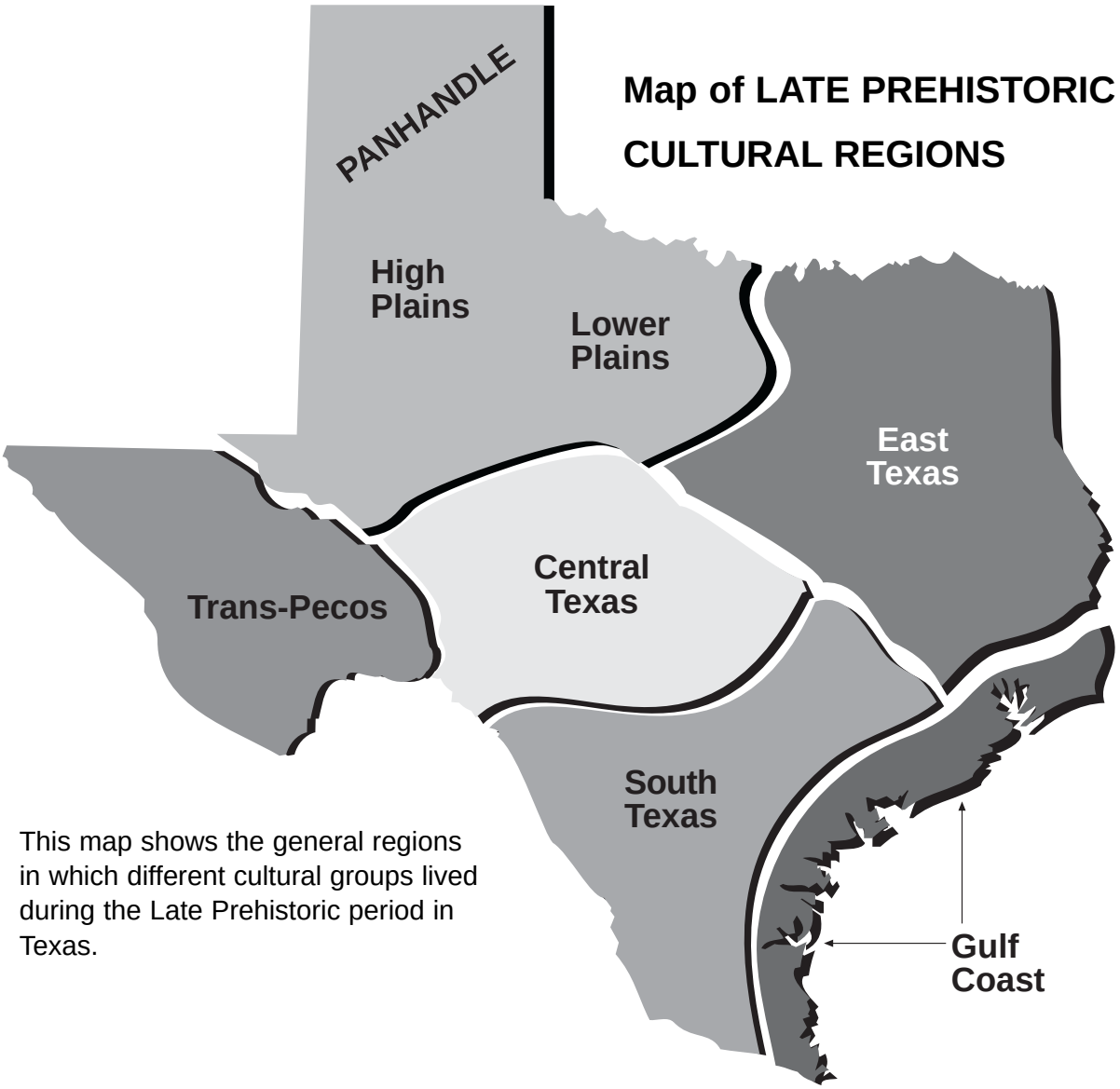
Late Prehistoric Peoples (A.D. 500–1500)

Beginning at about A.D. 500, new tools and new ways of producing food changed the lifeways of people in Texas. Some groups began to grow their own food (or to practice **agriculture**), make pottery, use the bow and arrow, and live a settled way of life. They began to live in villages instead of seasonal campsites.

These changes did not happen all at once. Some **Late Prehistoric** groups continued the wandering lifeways of their Archaic ancestors. These nomads still lived in small bands and depended on hunting and gathering for their food.

East Texas

In northeast Texas lived gardeners in villages. Women and men worked together to produce vegetables and grains. They also gathered nuts and berries, hunted small animals, and fished.



This map shows the general regions in which different cultural groups lived during the Late Prehistoric period in Texas.

Most of these people lived in large, permanent villages. Although they were farmers, hunting was still important to them. Sometimes groups of hunters traveled as far as the Panhandle or central Texas to hunt bison.

Because the people could grow and store food, the farmer villages became larger and lifeways became more complex. People in the villages were now able to **specialize**. That is, while some worked to get food, others could become hunters, artists, potters, or priests.

They built large earthen mounds that they used for special purposes. The George C. Davis site, in Cherokee County, is one of the best known mound sites in Texas. The ancestors of **Caddo** Indians lived there for over four hundred years (from the late ninth century A.D. to the early fourteenth century). One of the mounds there, measured by archeologists, was about 5 meters (16 feet) high, 83 meters (270 feet) long, and 50 meters (165 feet) wide.

A mound was built as the base for a temple or for the house of an important person. Some mounds were also used as burial places for special priests or great leaders. Beautiful pots and ornaments were placed in these special burials, while common people were buried more simply. Mounds were also places where religious and political activities took place, so these sites are called **ceremonial** or **social centers.**

Early Farmers

People who lived in the New World were skillful farmers, and they first **domesticated** many of the plant foods we enjoy today. Corn, green beans, pinto beans, potatoes, tomatoes, chile peppers, squash, pumpkins, chocolate, avocados, pecans, peanuts, and many other foods were raised or gathered in the wild. Prehistoric people also used domesticated plants besides foods, such as tobacco and cotton. Animals—most commonly dogs, but sometimes turkeys—also were domesticated.

A thousand years ago—long before Columbus "discovered" America—the ancestors of Caddo Indians in east Texas were living in settled agricultural villages. The clues survive in gardening tools and the remains of corn, squash, and beans. Archeologists have found this kind of evidence in many Late Prehistoric sites in Texas.

Trans-Pecos Texas

The Trans-Pecos is the region of Texas west of the Pecos River. Some of the people who lived in this part of western Texas in Late Prehistoric times were still nomadic, hunting and gathering wild plants for their food. These nomads often camped in caves and rockshelters, just as the Archaic peoples before them. Some of the most striking Indian art in North America is found in these caves and rockshelters that people used as camp sites over thousands of years.

In far western Texas some Late Prehistoric Indians settled down to a **sedentary**, agricultural way of life. The area in which they lived extended from about where El Paso is today to the southeast along the Rio Grande, toward the Big Bend area. These settled people lived very much as the east Texas farmers lived. They stayed in one place, built permanent villages, cultivated plants, and made pottery. However, the houses they lived in were very different from those of their faraway east Texas neighbors.

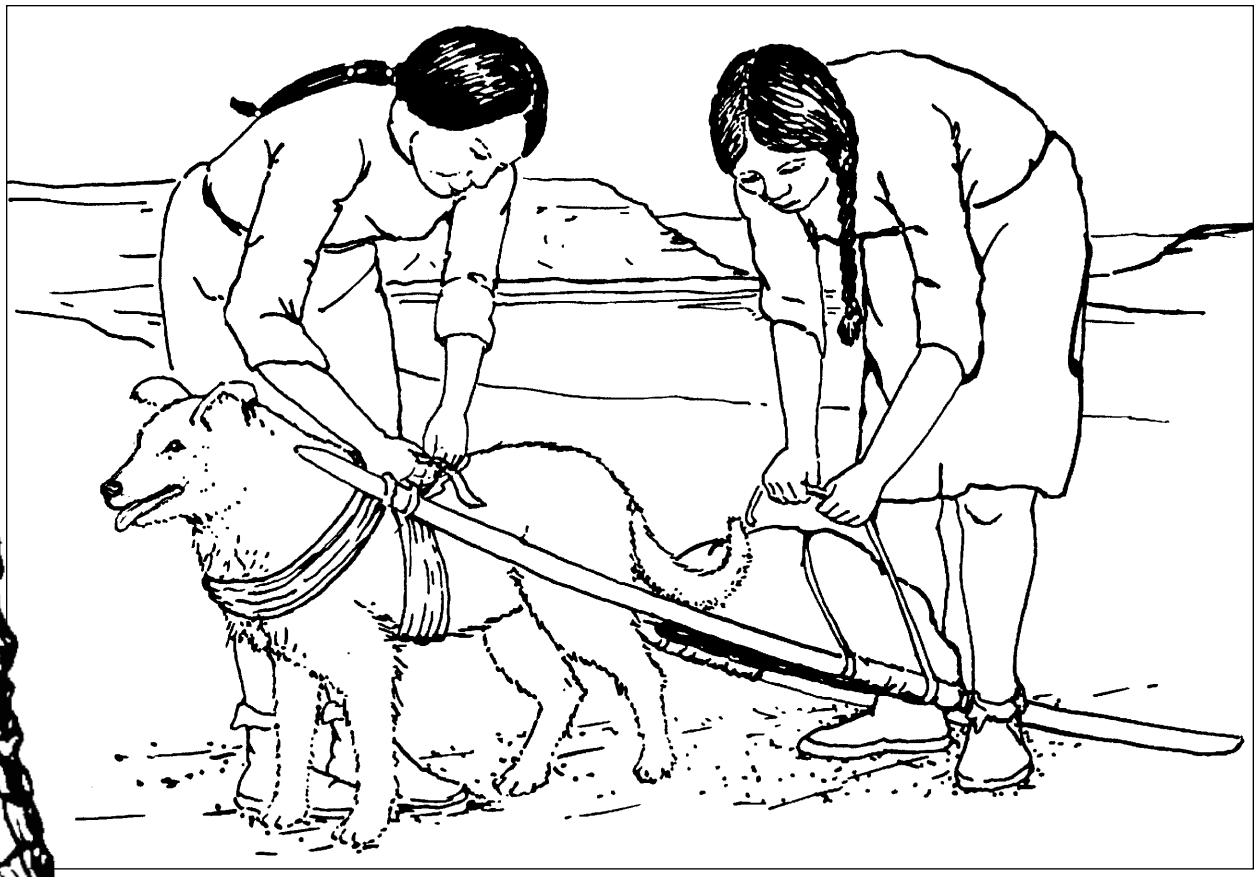
The western farmers built houses close together in one-story, above-ground **pueblos** made from **adobe** (mud brick). The houses of western Texas Indians were similar to the pueblos in what is now New Mexico. The farmers of west Texas also were similar in other ways to their neighbors in New Mexico. For example, some of the pottery made in west Texas is like pottery made in New Mexico.

The Panhandle and the Plains

In the Texas Panhandle other groups of Late Prehistoric Indians depended on agriculture for part of their food supply. These people settled in an area along the Canadian River and built permanent buildings. Some of their villages were built on the tops of mesas and hills that could be easily defended from their enemies. Their houses, built of stone slabs, were placed side by side with the walls touching, like pueblos. Although the people grew crops, bison hunting was still very important to them. One of their typical tools is a hoe made of the shoulder-blade bone of a bison.

These Panhandle villagers traded with groups in other parts of Texas. They also traded over long distances with other groups living in the southern Great Plains region. Their main items of trade were probably bison meat and hides. Some of the items that they got in trade—such as **turquoise** and pottery from New Mexico—have been found in sites where their villages were located. By A.D. 1450 the villagers had disappeared. Drought may have caused the villagers to give up farming and become nomadic hunters. Or, they may simply have moved away.

Toward the end of the Late Prehistoric period, nomadic bison hunters came to the Texas



*Dogs were domesticated animals. Some nomadic tribes among the **Plains Indians** used dogs to help them move their possessions. The **travois**, which was pulled by dogs, consisted of two poles serving as shafts and a platform or net, hung between the poles, on which the load was placed.*

Late Prehistoric Artifacts

Late Prehistoric remains such as arrowpoints, pieces of pottery, and the ruins of ancient structures help the archeologist understand Late Prehistoric cultures.

Fresno, **Scallorn**, and **Perdiz** are only three of many arrowpoints made by Late Prehistoric people in Texas.

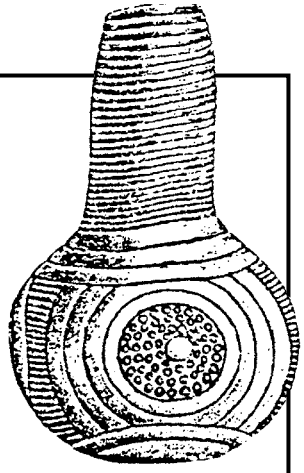
Many sizes and types of pottery vessels were made by Late Prehistoric people. Some were very simple cooking pots, but many were decorated with engraved designs, like the bottle in the picture.

Ornaments, baskets, sandals, woven mats, and other objects also were made by the Indians of Texas in the Late Prehistoric period.

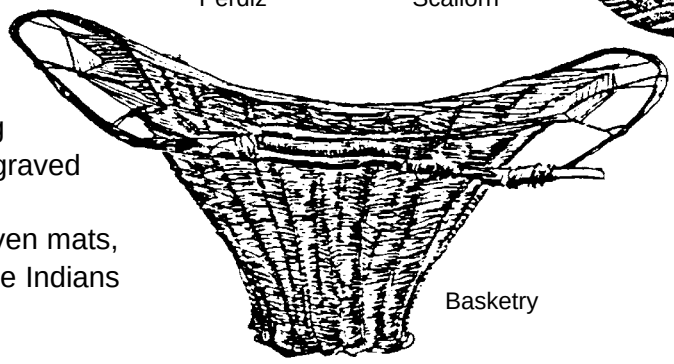
Fresno

Perdiz

Scallorn



Pottery Bottle



Basketry

Panhandle and Plains region. Some of these hunters were ancestors of the Apaches, one of the best-known historic Indian groups in Texas. These nomadic peoples are sometimes called pre-horse Plains Indians.

Central and South Texas

In central and south Texas there were no settled farmers. Indians lived by hunting and gathering, and they probably stayed in seasonal camps. Wild plant foods such as the prickly pear fruit, acorns, mesquite beans, and pecans were collected when they were in season. In the wintertime, the people hunted buffalo and other animals. Late Prehistoric people in this region lived very much as their Archaic ancestors had lived. However, they used the bow and arrow, and most groups made simple ceramic pots.

The Texas Gulf Coast

Along the Texas coastal region, Indians gathered wild vegetables, such as mesquite beans and prickly pear fruit. They hunted deer and smaller animals and ate fish, clams, and oysters. They made dugout canoes to use in gathering seafood from the coastal waters. Some of these Late Prehistoric people had territories that included both coastal and inland areas. They wandered from place to place in small groups, gathering wild foods and hunting.

The lifeways of Indians along the Texas Gulf coast also were much the same as they had been in Archaic times. However, some of the coastal Indians made pottery, and they all used the bow and arrow.

Archeological sites called **shell middens** are a common type of site left by coastal Indians. The middens are like a landfill made up of the remains of oyster and clam shells mixed with other trash and discarded items. The size of some shell middens tells archeologists that prehistoric people often returned to the same coastal sites year after year. When there were lots of shellfish, the people must have enjoyed large feasts at some of the sites.

APPLYING YOUR KNOWLEDGE

Some people became specialists in Late Prehistoric times.

- Right now you are probably a student—a specialist in learning.
- Can you name some modern specialists?

Name some modern ceremonial, civic, or social centers.

- What evidence might be found in these centers that would help future archeologists identify them?

Corn is one of the most important food grains in the world today, and it was first domesticated by prehistoric people in the New World.

- Find out more about New World foods that are still important today.

Trade was common in prehistoric times, even though walking was the most common means of traveling. (Some groups did use canoes along the coastlines or riverways.) Some trade items from places as far away as the Pacific coast have been found in Texas sites.

- How do you think shells were traded? Do you think one trader walked all the way from California to Texas carrying shells? Or, do you think the shells were traded eastward from group to group until at last they were traded to a Texas group?
- What do you think people learned about different lifeways through their trade contacts?
- What are some ideas they might have traded in this manner?

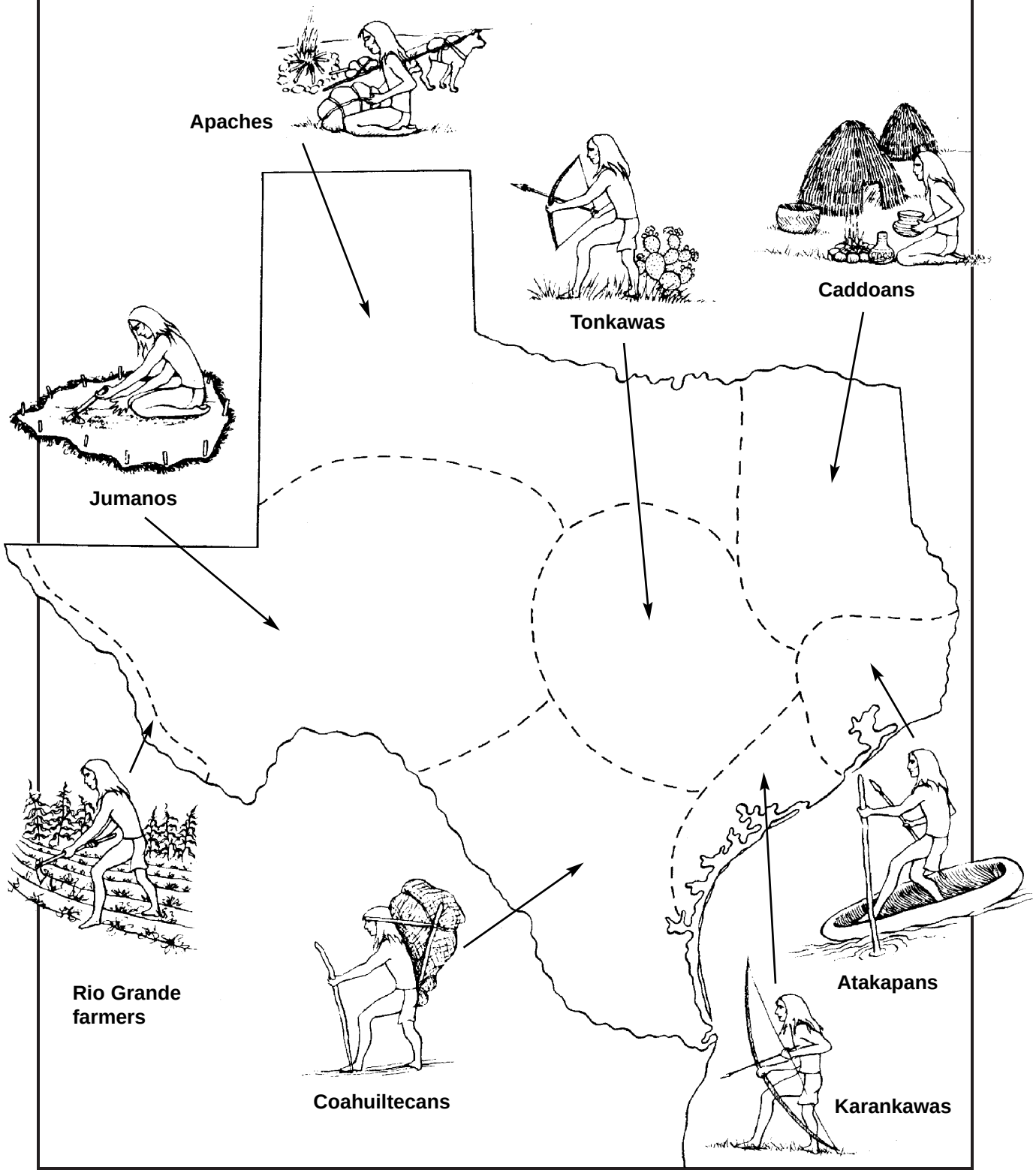
Historic Indians (AFTER A.D. 1500)

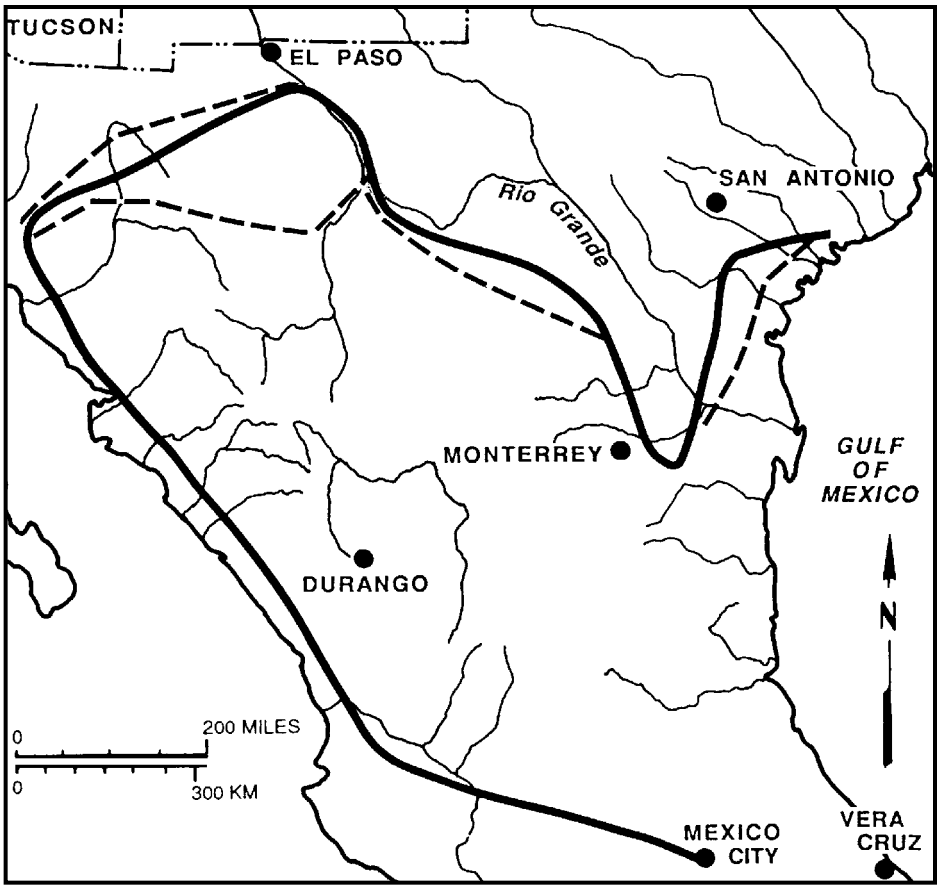
Native Americans had lived in Texas for thousands of years before the arrival of European explorers. However, some groups, such as the **Comanches** and **Apaches**—the tribes we usually think of as Texas Indians—were newcomers. The Apaches came to Texas from the north very late in Prehistoric times, and the Comanches arrived even later, in the **Historic** period.

The Historic period in Texas began with the arrival of the Spanish. The first Spaniard known to visit Texas was **Cabeza de Vaca,** who was shipwrecked on the coast in A.D. 1528. The account of his journey across Texas marks the beginning of the Historic period. Other explorers and priests soon followed, and their journals, letters, and reports describe the first meetings of Native Americans and European newcomers.

In the very early Historic period, when European explorers first came to Texas, Indians were living as they had lived in Late Prehistoric

General Location of the Major Indian Groups of the Early Historic Period





This map shows the route of Cabeza de Vaca as it has been traced by historians and archeologists (the dotted line shows where the experts disagree on the exact route). Knowing where the early explorers traveled is important because their accounts of their journeys contain information about the Indians they met and the environment as it was before European settlement. The study of Historic Native Americans from these written accounts is called ***ethnohistory.***

times. In some areas, traditional ways of getting and processing food through hunting, gathering, and agriculture continued into the early Historic period. For example, drying meat was an important food-processing tradition. Dried meat (jerky) was easier to carry about and lasted longer than fresh meat. **Pemican** was made by mixing together ground-up dried meat and plant foods such as berries. Pemican was a convenient "trail mix" for nomadic tribes.

The clothing and appearance of early Historic Indians—before they were changed by European influence—varied as much as the lifeways of the people did. People of the nomadic tribes, such as the **Atakapans, Karankawas, Coahuiltecans,** and **Jumanos,** dressed very simply. The men wore breechclouts, and the women wore simple skirts of animal skin. Buffalo robes or coverings of other animal skins were used over their usual clothing to provide warmth in winter.

The clothing of the sedentary, agricultural people was much more elaborate. The Caddo, who lived in villages in east Texas, made clothing of expertly tanned deerskins. Some of their clothing was painted and ornamented with fringe and seeds. They probably wore their decorated clothes for ceremonies or other special occasions. Women sometimes wore skirts of cloth woven from plant fibers or made from bark. In addition to skirts and breechclouts, the Caddo made moccasins, leggings, and shirts of deerskin. They also used buffalo robes for extra warmth in winter.

Contact and Change

In early Historic times, which archeologists call the **Contact** period, many of the Indians of Texas were still living in ways that had developed in the Late Prehistoric period. For example, the Caddo Indians of northeast Texas continued to grow crops and make pottery and many kinds of stone, bone, and wood tools. Apaches in the Panhandle hunted bison just as Plains Indian cultures had done in Late Prehistoric times.

European influence soon changed traditional lifeways throughout North America. The Indians quickly learned to use new skills and materials that were introduced by the Spanish. Learning to ride horses and use guns were major changes, but they were not the only changes in traditional Indian lifeways. For example, the Indians soon learned to make tools from metals such as iron, which was brought by Europeans. Arrowpoints made of metal—and even arrowpoints made of glass—have been found in many Historic Indian sites.

The Historic period brought many changes to the Indian cultures—changes that destroyed some groups and changed the lives of all. Lifeways that had taken thousands of years to develop were changed abruptly all across North America with the coming of the Europeans. Horses, guns, competition for land, and diseases altered forever the lives of Native Americans.

Horses were brought to Texas by the Spanish. Indians acquired the animals either by catching wild horses (mustangs) that had escaped from the Spanish, or by raiding the herds at Spanish settlements. Indian hunters quickly became expert horsemen, hunting buffalo on horseback, keeping up with the herds and killing them more easily.

In the early 1700s the Comanches swept into Texas on horseback, forcing many Texas Indians from their traditional territories. Guns brought by the French and Spanish also changed the patterns of Indian life.

As the frontier pushed ever westward, the eastern farming Indians were forced west by European settlers who wanted the farm land. Western Indians were forced to give up some of their land to make room. The Indians found that the new lands were not easy to farm. Hunters also had to learn new skills in order to hunt different kinds of animals.

New diseases were brought by Europeans into Texas. Smallpox and cholera killed entire tribes of Indians. Competition for new territories caused warfare among the tribes. And the Indians became more hostile as settlers pushed westward, claimed land, and built forts to protect settlements and wagon trails.

By the 1870s, European and Anglo-American buffalo hunters had exterminated the bison in Texas. They killed the animals just for their hides and left the meat to rot on the plains. The destruction of this important food source made the traditional lifestyle of the Plains Indians impossible.

Warfare, diseases, and the push to the west quickly reduced the number of native Texans to less than half of what it had been before the Europeans came. Today only three tribal groups live within the boundaries of the state.

The **Alabama** and **Coushatta** Indians were closely associated before they came to Texas in the early nineteenth century. In 1854, the State of Texas gave 1,280 acres to these people, and that land was the beginning of the **Alabama-Coushatta** Reservation in east Texas that exists today. Although the Alabama-Coushatta have adopted many of the ways of the modern society that surrounds them, they still retain their language and many of their traditions. Their reservation, near Livingston in Polk County, is open to visitors.

The **Tigua** Indians came to west Texas in 1680 from New Mexico. They were granted 36 square miles of land by the Spanish, but through the years their rights to this land were disputed and lost. In 1967, the State of Texas recognized them as a Texas Indian tribe. There were then about 90 families living in a section of the town of **Ysleta**. Ysleta is now part of El Paso, and the Ysleta pueblo and mission church are open to visitors. Near El Paso is **Hueco Tanks,** a rock art site connected with both historic and prehistoric groups. The rock art is protected in a state park.

The Texas Band of **Kickapoo** Indians is a sub-group of the Kickapoo Tribe of Oklahoma. Many years ago, this group was forced to migrate from its ancestral lands to an area that is now in Texas and Mexico. Recently they have been living on the border in Eagle Pass, but their status as United States or Mexican Indians was not clear. In 1983 the Texas Band was recognized by the federal government. This means that members of the band can now get services that the U.S. government provides to other Indians. One hundred acres of land in Maverick County has been set aside for the small band of Texas Kickapoos. Their right to cross the U.S.-Mexico border is part of the new federal law, which is called the Texas Band of Kickapoos Act.

None of the Texas Indian cultures that were present at the beginning of the Historic period now lives within the borders of Texas. By 1880 they had been forced out of the state or destroyed. A handful of **Lipan Apaches** live in New Mexico, a few **Tonkawas** in Oklahoma, and the **Wichitas,** Caddos, and Comanches are joined together on reservations in Oklahoma. The Karankawas, Coahuiltecans, Atakapans, Jumanos, and others have all disappeared—vanished forever.

The experience of all the Indians of North America was much the same as it was in Texas. How did they feel about the changes that came in the historic period? A **Sioux** Indian of the northern plains expressed it this way:

> They made us many promises,
> more than I can remember,
> but they never kept but one;
> they promised to take our land and they took it.

APPLYING YOUR KNOWLEDGE

Some Historic Indians adopted clothing styles from Europeans.

- What other things, besides guns and horses, may Indians have adopted from Europeans?

Many place names in Texas (such as the names of rivers) were adopted from Indian words.

- Name at least threeTexas place-names that came from Indian words.

Who is "us" in the Sioux poem? Write your own poem telling how you feel about the Indians of Texas.

There are only three tribal groups in Texas, but many Native Americans live in the state, and in the United States there are almost 2.5 million Native Americans.

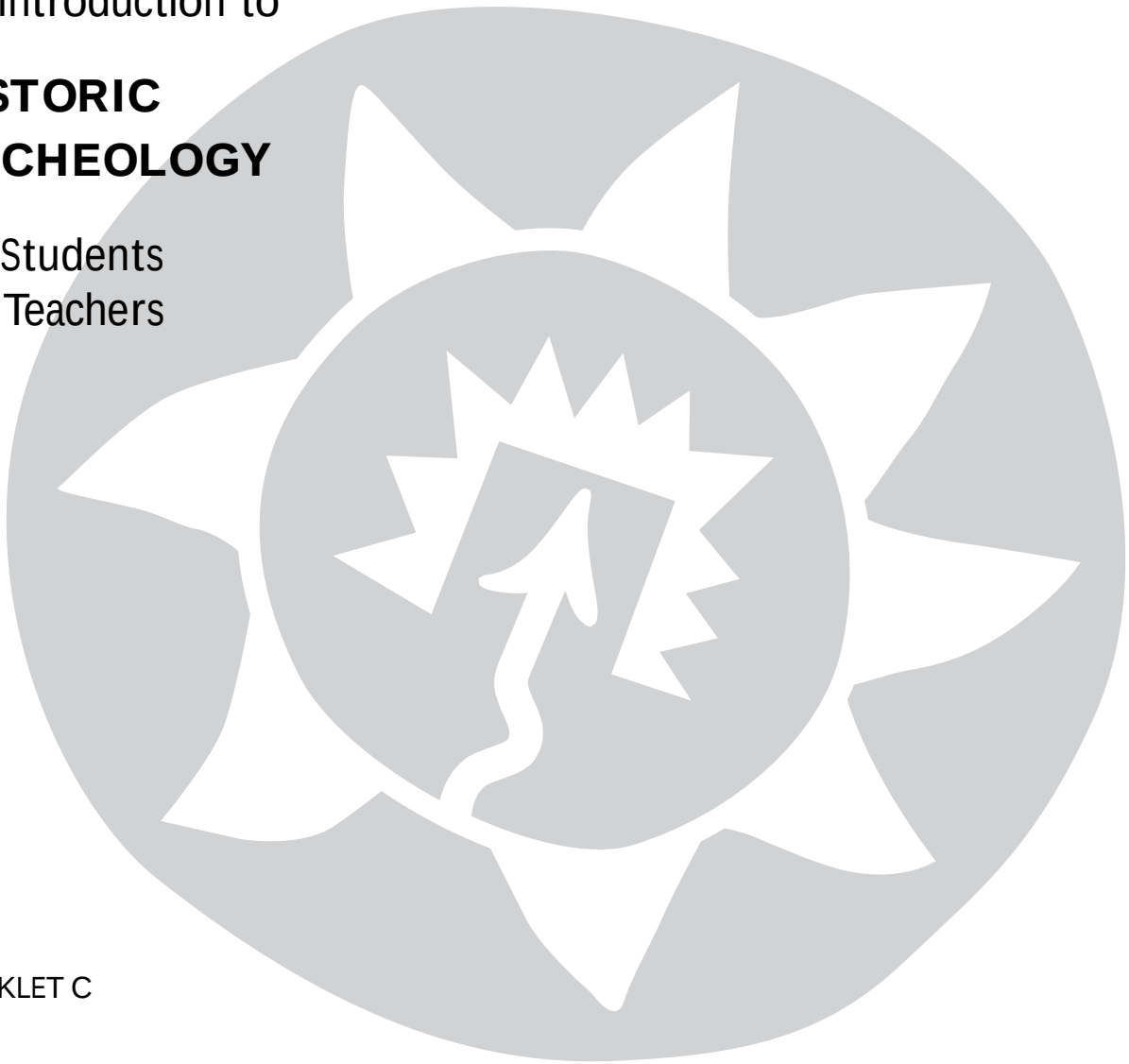
- Name any famous, 20th-century Native Americans that you know about.
- Do you need to learn more about the Native Americans of yesterday and today? Books about Texas Indians, including books for young readers, are listed in the resources section, in Part III of this unit.

Historic Texas

An Introduction to

HISTORIC ARCHEOLOGY

for Students and Teachers



BOOKLET C

Archeology Divison
TEXAS HISTORICAL COMMISSION
Austin 1998

Preface

This section, or "booklet," on Texas from the period of exploration through the 19th century is intended as an introduction to historic archeological sites in Texas for teachers and students. The reading level of this section is more appropriate for middle-school students and above. Teachers may photocopy without permission any or all of this section for classroom use only. Other use of this material requires permission from: Archeology Division, Texas Historical Commission, P.O. Box 12276, Austin, TX 78711-2276.

Teachers may choose to use this material either as background information for classroom discussion or as text to be assigned for reading.

This section should serve as general background information for the classroom activities relating to historic sites in Part II of this unit for teachers. Those who want more information should see the list of books and other resources in Part III.

"Historic preservation on the threshold of the 21st century is about much more than bricks and mortar. It is about saving, creating and enhancing community."

—Richard Moe
President, National Trust for Historic Preservation, 1997

Permission: Office of the State Archeologist archeological reports; *You Are the Guardian of the Past* (1995 edition); *CRM News & Views* newsletter (various issues, 1997) and *The Medallion* newsletter (various issues, 1997).

Archeological Sites and Historic Times in Texas

Introduction

The Historic period begins with the coming of the Spanish in the 16th century A.D. Like prehistoric sites, historic sites often require archeological investigation before they reveal their centuries-old secrets. Combining archeological and historical study methods can add to what we already know about many historic places—even sites as well known as the Alamo.

What are some examples of important historic archeological sites in Texas? There are so many that we can only mention a few types that have been studied by archeologists.

Exploration and Colonization (1659–1836)

Texas was part of the northern frontier of Spanish settlements in the New World. These settlements included villages, **presidios** (forts), and **missions.** Spain's main reason for establishing its first settlements in Texas was to keep the French from gaining control of more territory.

Missions were established to **Christianize** the Indians, and the presidios were set in place to protect the missions and other settlements. The Spanish hoped that the Christianized Indians would adopt European farming methods and that the missions could become towns.

Spanish settlement relied mostly on farming methods and familiar foods from Europe. Because of this, the settlements usually were located in areas where these farming traditions were possible. For example, missions were usually located near rivers that could be used for **irrigation.** Besides farming, the missions were successful in raising cattle, especially in the San Antonio area.

Among the best-known Spanish sites in Texas are the San Antonio missions—now included in a national historic park. Archeological investigation

has played a role in restoring these and many other 18th-century structures. Archeologists have also studied the system of **acequias** (irrigation canals) and ranches associated with the missions.

Spanish shipwreck sites have been found on the Texas coast, off Padre Island. They contain some of the most valuable historical information and artifacts to be found in underwater sites in the Western Hemisphere. In the late 1960s, a 1554 Spanish shipwreck site was excavated. Artifacts from the ship are now on display in a museum in Corpus Christi.

When Mexico won independence from Spain, Texas became part of Mexico. This era of Texas history is very brief (1821–1836), and only a few settlements date from those years. Most of the new Mexican settlements were associated with ranching. One of the best-known towns of this period is Victoria, founded in 1824.

Most people probably think that all of the important Spanish sites in Texas were located and studied many years ago. Not so! During the past five years, two new sites of national importance have been located by archeologists.

Coronado's Campsite

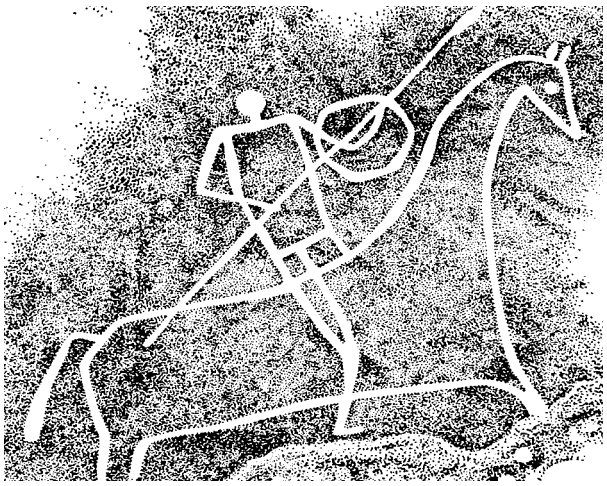
From 1540 to 1542 an expedition led by Spanish explorer Coronado traveled four thousand miles through the American Southwest in search of gold. The expedition included about 1,500 Indians, 300 Spanish soldiers and adventurers, and thousands of domestic animals—cattle, sheep, and horses. In spite of the many people animals, and all of the gear they must have needed, material remains of their presence in Texas have been hard to find.

An archeologist began looking for one of Coronado's campsites in Texas in the early 1990s. In the spring of 1996 he announced that a campsite had been located in Blanco Canyon in the Texas Panhandle, near the town of Floydada.

The site is of great importance in Texas history because it relates to the first encounter of Europeans with Indian groups of the Panhandle-Plains region. Accounts of the Coronado expedition contain the first descriptions of Plains Indians in Texas.

European artifacts found at the site include: **crossbow** points, a complete horseshoe dating from the period of Spanish exploration, and a **chain mail** glove.

The site has been assigned the number 41FL81, for the 81st archeological site recorded in Floyd County.



The horse was introduced to Native Americans by the Spanish and soon appeared in historic rock art. Petroglyph from Garza County.

Mission San Sabá

In 1757, in what is now Menard County, the Spanish established Mission Santa Cruz de San Sabá. The mission was part of the Spanish effort to deal with the Lipan Apaches. Only ten months after its founding, the mission was attacked and burned by a large force of Native Americans, mostly Comanches.

Both historians and archeologists have long searched for the mission site. In 1993 a team of historians and archeologists, working together, at last succeeded. They found the general area by research in historic documents. As they searched for the exact site, they were lucky to come upon a recently plowed field. The plowing had turned up several artifacts, including a ceramic **olive jar** fragment dating from the Spanish Colonial period.

Test excavations at the site revealed many more types of artifacts. Sherds of **Majolica** (a

kind of pottery that is typical of Spanish Colonial sites) were found. Metal objects included wrought-iron nails, latches and hooks, hinges, horse gear, and musket balls.

San Sabá is famous not only as a mission site but as the site of a historic event. The battle at San Sabá was the first one between Spaniards and Native Americans in Texas in which the Native Americans used guns. The guns they used were **flintlock** weapons. This battle was also the first major conflict with the Comanches in Texas.

Early French Settlement (1685 to 1820)

French settlement in Texas was never very widespread. All of the settlements were located along the borders of the state: three along the Red River, two near the eastern border, and two on the Gulf Coast.

The beginning date of French settlement is set by the founding of **La Salle**'s **Fort St. Louis** in 1685. The ending date is set by the abandonment of pirate **Jean Lafitte**'s Galveston Island community in 1820.

In the late 18th and early 19th centuries, Indian villages along the Red River were supplied by French traders. Archeological investigation of these sites has added to our understanding of the early French presence in Texas. Study of these sites also has helped us understand when contact with Europeans began to alter forever the lives of Native Americans.

Besides these trading sites, the best known French settlement site in Texas is **Nacogdoches** in East Texas, founded in 1721.

The most important French settlements in the southern United States lie to the east of Texas, in Louisiana. However, the French presence in Texas led the Spanish to become more active in this frontier area. They established missions, presidios, and settlements to prevent the French from taking over. So, today Texas has a unique Hispanic heritage—with just a hint of Cajun spice along our eastern border.

La Salle, Fort St. Louis, and the *Belle*

In 1685 Robert Cavalier, Sieur de La Salle, sailed from France in search of the mouth of the Mississippi River. His ships arrived, instead, in what is now Matagorda Bay on the coast of Texas. One of his original four ships had been captured by pirates, one was shipwrecked, and a third was sent back to France. La Salle and 20 of his remaining 180 men moved inland to find a location for a colony. He founded Fort St. Louis near the coast in what is now Victoria County.

When La Salle returned to the coast, he learned that his fourth ship, the ***Belle,*** had been wrecked during a storm in the bay in 1686. Bad luck and mistakes continued, and La Salle's attempt to establish a colony failed. Most of the colonists died, and a Spanish expedition later burned the remains of the fort.

More than 300 years later, in 1995, Texas Historical Commission (THC) archeologists located the site of the Belle shipwreck. Evidence that the wreck was indeed that of the *Belle* was discovered in one of the first recovered artifacts—a 700-pound bronze cannon with identifying French markings.

Incredibly, in 1996, THC archeologists also verified the site of Fort St. Louis. The site had been studied by historians, but there was no final evidence that this was the fort site until the archeologists excavated a cache of cannons there. The cannons had been found and buried at the site by a Spanish expedition—and were described in Spanish accounts.

Texas as Republic and State (1836–to present)

When Texas became a republic, many new immigrants came from the United States and Europe. They joined the Mexican Texans, African Americans, and Anglo-Americans who were already living here.

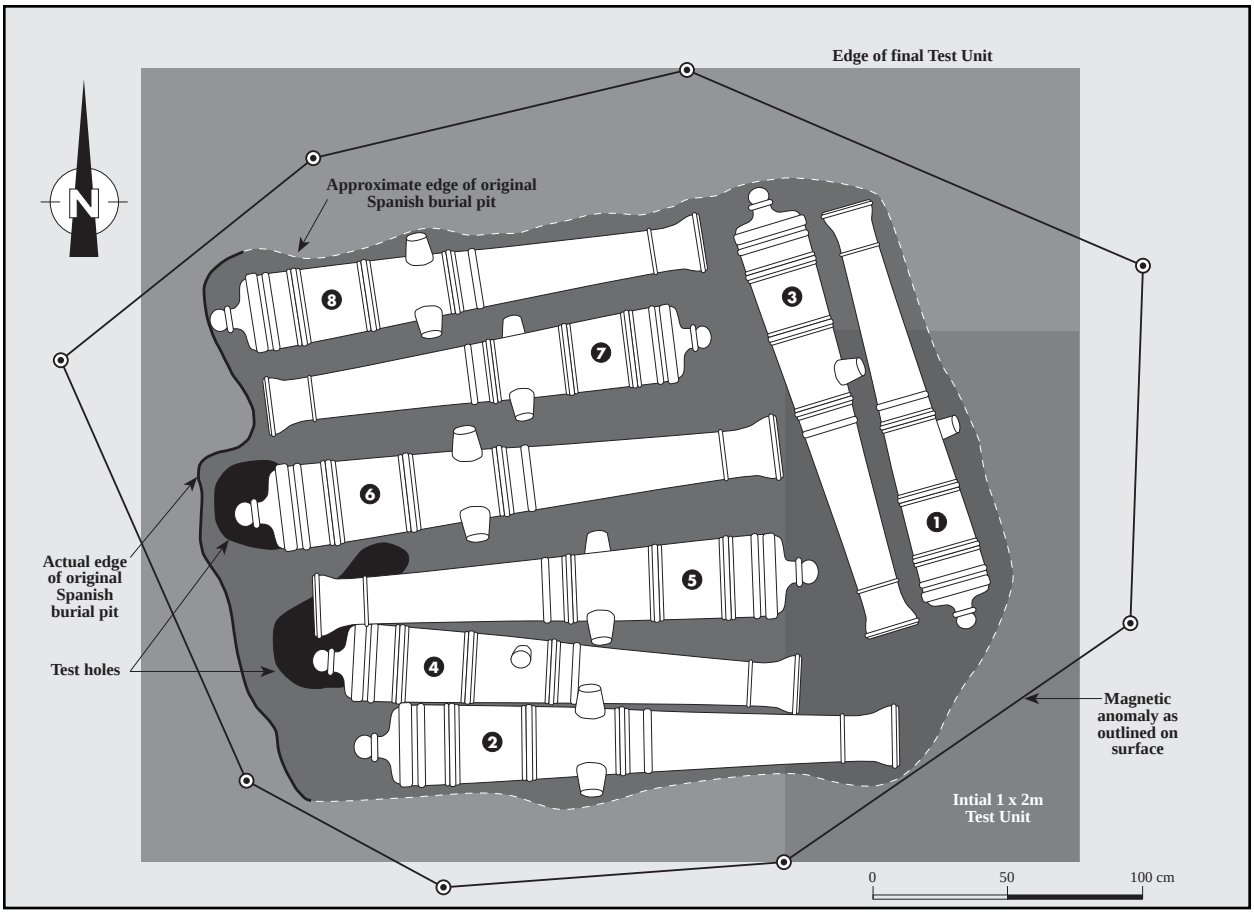


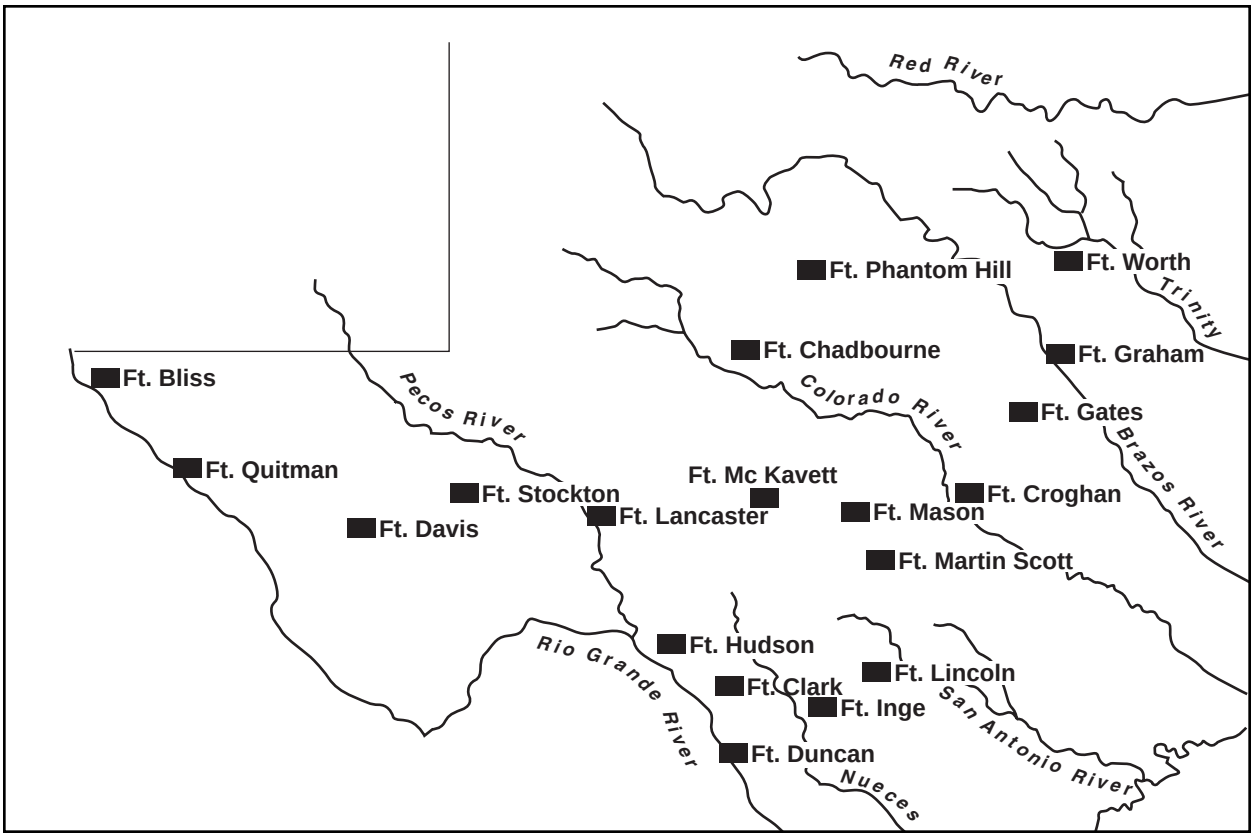
Diagram of the excavation of La Salle's cannons at Fort St. Louis.

Native American groups who had originally lived in Texas had been unable to withstand the settlement of their territories. First the European and, later, the Anglo-Americans pushed the Indians out of Texas. By the 19th century, only the Comanches and their allies remained as a real threat to western settlement. In the early days the Comanche's allies were the Wichitas. Later the Comanches were joined by **Kiowas, Kiowa Apaches, Cheyennes,** and **Arapahoes.** Apache resistance continued only in far western Texas and New Mexico.

When Texas joined the United States, federal forts were established to assist in the eradication of these aggressive tribes who were dedicated to holding fast to their lands and their independence. In 1874 the U.S. military began a campaign to force the last of the Indian tribes that lived in Texas onto reservations in the "Indian Territory" of Oklahoma. This military campaign was known as the Red River War because it took place near the headwaters of the Red River in the Texas Panhandle.

Several battles took place during this campaign in which the Indians were defeated. In 1875 the last of the Comanches, led by the famous chief Quanah Parker, surrendered to the military. With the end of the Red River War, the Indians' determined resistance had failed, and the way west was open to Anglo-American settlers.

Pioneer settlers moved westward and northward across the land from the early settlements in eastern Texas. They built dugouts, log cabins, and simple stone and adobe structures. Archeological investigation of their home sites has revealed many details of Texas history. Archeology has helped us understand the trade and communications routes that the settlers devel-



Early frontier forts in Texas, 1848–1860.

oped and has revealed in vivid detail the daily lives of pioneer families.

Sites of early industry in Texas include railroad camps, mines, sawmills, pottery kilns, brick works, iron works, and cow camps. These sites tell of the roadworkers, the cowboys, and the laborers who live on in our folklore and literature but have too often been neglected in formal histories.

Today people of all racial, ethnic, and religious backgrounds live in Texas. And they are all creating the historic and archeological sites of the future.

The Frontier Forts—Historical and Archeological Sites

Most of the frontier forts of Texas were established in the 1840s. Then, they were temporarily abandoned by the federal government during the Civil War. Most were rebuilt after the war, but even these were active military installations for only half a century. A very few survived into the 20th century, and these survived with few of their original structures intact.

The **Texas Centennial**—the 100th anniversary of the Texas Revolution—was celebrated in 1936. Planning for this event inspired Texans to begin preserving the unique places and structures of the past. Some work was done to restore or protect the most famous frontier forts.

However, major work was not begun on most of the old forts until the 1960s. This work was inspired by new state and federal preservation laws. Archeology has played an important role in the restoration and protection of the forts. Artifacts recovered during excavations are now on display in many of these historic places. A list of historic forts that are open to the public is given in an Appendix at the end of this "Historic Texas" section.

A Frontier Fort inside a City

Fort Concho (1867–1889) is located within the City of San Angelo in Tom Green County. It is one of the best-preserved frontier forts in Texas, consisting of more than 20 reconstructed and restored buildings. The fort was established in 1867 and operated until 1889.

Archeology has been very important here, especially in locating the foundations of original buildings. Some of the remains of the fort still lie beneath the city streets of San Angelo.

The restored barracks is one of the site's most popular exhibits. This and other exhibits depict the history of the fort, local settlement, and the last days of the frontier.

Archeology also is part of on-going educational activities sponsored by the Fort Concho Museum.

About ten reports of archeological investigations at the fort, and many historical studies, have been published. The archeological site number of Fort Concho is 41TG57.

A Hispanic Neighborhood as an Archeological Site

As the population of Texas grows, so does the size of our cities. As a city grows, many of its older neighborhoods may be destroyed to make way for modern developments. The study of "urban archeology" is becoming more and more important. **Laredo** is a good example because it is an old Texas city in an area that was settled in late Spanish times.

The improvement of Interstate Highway 35 and a new bridge where it crosses the Rio Grande at Laredo was planned in the 1970s. The project would have an impact on an old area of the city, so state and federal laws required that historians and archeologists study the area.

Archeologists began investigation of a four-block area in 1979, and their report was published in 1986. The site area was numbered 41WB19.

Excavations revealed clues to 120 years of occupation of this Mexican Texan neighborhood.

African American soldiers, known as Buffalo soldiers, served at many of the frontier forts in Texas.

The archeologists found artifacts that were evidence of changes from Spanish times to the 1970s. To learn more about this site, the archeologists also studied written histories and interviewed people who had lived in the neighborhood.

The archeologists learned that in the time before the Civil War (1860) many houses were built of stone or **jacal** construction. A jacal was a small house built of upright sticks daubed with mud and having a thatched roof. The sticks were usually mesquite, since there were no large trees in south Texas. Houses of hand-quarried stone and jacals in south Texas date from as early as the 1790s, the period of Spanish colonization in this region.

After the Civil War the railroad came to Laredo, and from about 1888 to 1915 new brick

homes were built. Wooden houses of the **board-and-batten** type were associated with immigrants of the Mexican Revolution period.

The addition of electricity, plumbing, and paved streets marked the modern period of occupation.

Thousands of interesting artifacts were found. The artifacts helped the archeologists to understand the different periods of settlement and acculturation in this Laredo neighborhood.

Pioneer Cabins in LBJ Country

Lyndon B. Johnson, president of the United States from 1963 to 1969, is honored in Texas by both state and federal historic site parks. The state park is located in Gillespie County, near LBJ's birthplace. Besides honoring a famous Texan, the park also preserves a good selection of Texas history.

Historic frontier settlement left many important sites in the park area. German Texan homesteads of log and stone are found there. Also related to the period of German settlement are the remains of log barns, rock fences, vegetable and wine cellars, hand-dug wells, livestock corrals, well houses, smokehouses, a one-room schoolhouse, and a lime kiln.

Before the historic sites were restored, archeologists came in 1968 to record and study the archeological sites. The **Behrens, Danz,** and **Sauer homesites** were recorded. Small **test units** were excavated beneath and around the Behrens cabin, and a trash dump was explored. At the Sauer homesite test excavations revealed stone foundations of an earlier structure at the site. Deep test pits were dug in a trash-filled cellar, and many artifacts were recovered. The Danz place was carefully mapped and artifacts were recovered from the surface, but the site was left for later study.

Study of the structures and artifacts added many details to what we know about life in 19th-century German farmsteads. The archeological studies also helped in preservation of the historic sites. The Behrens Cabin has been restored and furnished as it was in the late 19th century. The Sauer homesite has been restored and is operated as a "living history" farmstead. Both are open to park visitors.

The Seminole Negro Indian Scouts

The **Seminole Negro Indian Scouts** were members of a unique culture. Their ancestors were runaway black slaves who, in the early 1800s, joined with the Seminole Indians in Florida. The Seminole blacks were later forcibly removed with the Seminoles to a reservation in Oklahoma.

On the reservation, the Seminoles were located near their traditional enemies, the Creeks. In the 1850s, to escape troubles on the reservation many of the Seminoles went to Mexico. Some of the Seminole Indians later returned to the reservation, but the Seminole Negroes stayed. From there in 1870 they were recruited into Texas by the U.S. Army to serve as scouts. A small group went to **Fort Duncan** in 1870, and two years later another group went to **Fort Clark.**

Fort Clark, located near the town of Brackettville in Kinney County, was founded in 1852. Based at this fort, the Seminole Negro Indian Scouts served as U.S. military scouts from 1872 until 1914. Four of the scouts received the Medal of Honor, but all of the scouts were known as excellent trackers, hunters, and soldiers.

All that remains of their presence in Texas is a cemetery and the buried remains of their village near Fort Clark. The scouts, however, are not forgotten. Many descendants live in the village of **Nacimiento**, in northern Mexico, where most of the scouts moved with their families after being dismissed from service in 1914. They still hold reunions and visit the cemetery near Fort Clark, and six years ago they started a drive to keep their history alive.

Descendants are being helped by the Texas Historical Commission and the Institute of Texan Cultures to preserve the story of the famous

A formal portrait of a Seminole Negro Indian Scout.

scouts. Archeologists located the former village site, and interviewers are recording family histories. Both historic and recent photographs are being collected and preserved.

APPLYING YOUR KNOWLEDGE

There were several Spanish missions and forts in Texas.

- The Alamo was once a Spanish mission, and its name was Mission San Antonio de Valero. Why is the Alamo famous in Texas history?
- Name some other Spanish missions in Texas.

Frontier forts were also part of the Historic Indian period.

- What kinds of things would you expect to find in a frontier fort?

Some sites associated with different ethnic groups are discussed above. Name these groups.

- Name some other ethnic groups that are part of Texas today.

A HISTORICAL REMINDER

Every historic site is also an archeological site. So the next time you visit the Alamo, or the San Jacinto Battlefield, or Mission San José, a pioneer log cabin, or even a historic home in a small town, you are also visiting an archeological site.

Historic sites on public lands are protected by law. Those on private land are not. So, only you can protect many of the historic sites in Texas.

Please don't dig in sites, don't remove artifacts from sites, and *do* encourage others to follow your example.

Remember, *you* are:
The Guardian of the Past.

APPENDIX

Forts You Can Visit

Fort Belknap (1851–1876)
South of Newcastle, Young County.
Six original structures and one replica of this federal frontier fort are now part of a county park.
www.grahamtxchamber.com/historical_tours.html

Fort Clark (1852–1946)
Near Brackettville, Kinney County.
Fort Clark is associated with both the Seminole Negro Indian Scouts and the Buffalo Soldiers. This fort did not close until after World War II. It is now a private museum, open to the public. Fort Clark's site number is 41KY21.
texaspecostrail.com/plan-your-adventure/historic-sites-and-cities/sites/old-guardhouse-museum-fort-clark

Fort Davis (1854–1891)
At town of Fort Davis, Jeff Davis County.
This federal frontier fort is now a restored National Historic Landmark, administered by the National Park Service. It is one of the best-restored forts in Texas. Fort Davis's archeological site number is 41JD128. www.nps.gov/foda/index.htm

Fort Duncan (estab. 1849)
Near Eagle Pass, Maverick County.
Several buildings have survived at this federal frontier fort and have been restored as part of a municipal park and country club. Fort Duncan's site number is 41MV2.
www.eaglepasstx.us/default.aspx?name=Parks_Museum

Fort Griffin (1867–1881)
North of Albany, Shackelford County.
This federal frontier fort is now a state historic site park. Fort Griffin's archeological site number is 41SF4. www.visitfortgriffin.com/

Fort Lancaster (1855–1861)
East of Sheffield, Crockett County.
This federal fort, which was not reestablished after the Civil War, is also an Indian Wars battle site. The restored ruins are now a state historic site park. Fort Lancaster's archeological site number is 41CX28. www.visitfortlancaster.com/

Fort McKavett (1852–1883)
Southwest of Menard, Menard County.
This federal fort has been well restored and is now a state historic site park. Fort McKavett's archeological site number is 41MN2.
www.visitfortmckavett.com/

Fort Martin Scott (estab. 1848)
Near Fredericksburg, Gillespie County.
The post guardhouse (restored) still survives. The site is operated by the Fredericksburg Heritage Foundation. Fort Martin Scott's archeological site number 41GL52. www.ftmartinscott.org/

Fort Mason (1851–1869)
Near Mason, Mason County.
This federal frontier fort was abandoned and fell into ruins. The officers quarters have been reconstructed on the original foundations, and the fort is now open to the public. Fort Mason's site number is 41MS130.
www.masontxcoc.com/attractions-rec/114-fort-mason

Fort Parker (estab. 1834)
Near Groesbeck, Limestone County.
This private fort, first home of Cynthia Ann Parker, mother of Quanah Parker, was restored in 1936 and again in 1967. It is now a state park. Fort Parker's site number is 41LT8.
www.tpwd.state.tx.us/state-parks/fort-parker

Fort Richardson (estab. 1866)
Near Jacksboro, Jack County.
Six buildings survive at this fort, which has been restored by the Texas Parks and Wildlife Department. Fort Richardson's archeological site number is 41JA2. www.tpwd.state.tx.us/state-parks/fort-richardson

Fort Stockton (estab. 1858)
In city of Fort Stockton, Pecos County.
This federal fort guarded the San Antonio–El Paso road. Several original buildings, primarily of adobe construction, still stand in the historic part of the city of Fort Stockton. The fort's archeological site number is 41PC71.
historicfortstocktontx.com/attractions-2/historic-fort-stockton/

GLOSSARY

You probably already know some of the words in this glossary. But some words may be used with other words to form phrases that have special meanings. Some words have many meanings, and the ones given here are only the ones used in this book. Pronunciations guides are included for all except simple words and abbreviations.

A.D.—the abbreviation of *anno domini.* In measuring time, this means years since the birth of Christ.

aborigines (ab-oh-RIJ-uh-neez)—the indigenous inhabitants of a country; the native peoples as contrasted with invading or colonizing peoples. In North America we usually use the terms Native Americans or American Indians, while in Australia the term Aborigines is used to indicate the original human inhabitants of the country.

acequia (uh-SAY-kee-uh)—an irrigation channel, or ditch. A system of acequias is associated with the Spanish Colonial missions in San Antonio.

adobe (uh-DOH-bee)—bricks made of mud mixed with straw and dried in the sun.

agate (AG-it)—a hard, fine-grained stone having several colors arranged in stripes or bands. Alibates agate, from the Texas Panhandle, is banded gray and purple; this agate was used in making stone tools during thousands of years of prehistory.

agave (uh-GAH-vee)—a group of related plants that have long spiny leaves, such as the century plant and the Spanish dagger.

agriculture (AG-ri-kuhl-cher)—farming, or the cultivation of food plants such as corn and beans.

Alabama (al-uh-BAM-uh) **- Coushattas** (koo-SHAH-tuhz)—a group of Indians who came to East Texas in the early 1800s and who still live in the state today.

anthropology (an-throh-PAHL-uh-jee)—the study of human cultures.

Apaches (uh-PA-cheez)—Native Americans of the Contact and historic periods in Texas. The Apaches were a bison-hunting culture and were first met by Spaniards in the Texas Panhandle.

Arapahoes (uh-RAP-uh-hohz)—a northern Plains group that joined with several southern Plains tribes in the 1860s; they became allies of the Comanches.

Archaic (ar-KAY-ik)—a long period of prehistory following the Paleoindian period. Archaic people lived mostly by hunting small game and gathering wild plant foods.

archeology (ar-kee-AHL-uh-jee)—the science of learning how past people lived by studying the remains they left behind in the places where they once lived or camped.

archeological (ar-kee-oh-LAHJ-uh-kuhl) **repository** (ree-POZ-i-toh-ree)—a place where archeological records and artifacts are stored for permanent curation. In Texas, the main archeological respository is the Texas Archeologial Research Laboratory, which is a part of the University of Texas at Austin. *See also* curation.

archeological (ar-kee-oh-LAHJ-uh-kuhl) **site** (syt)—a place that contains artifacts or other cultural remains left by people who once lived in or used that place.

arrowpoint (EHR-oh-poynt)—a sharp stone tip, or projectile point, for use on an arrow that is to be shot from a bow.

artifact (ar-tuh-FAKT)—any object that was made by past people. For example, an arrowpoint or a clay pot.

association (uh-soh-see-AY-shun)—undisturbed artifacts or other remains that are found

together in a site are described by archeologists as being found in association. For example, a Paleoindian site may contain spear points in association with mammoth bones.

Atakapans (at-uh-KAP-uhnz)—a group of Indians who lived in the southeastern part of Texas and along the upper Texas coast at the time of European contact.

atlatl (AT-uhl-at-uhl)—a tool, usually made of wood, that was used as a spear thrower in much the same way that a sling shot is used in throwing rocks.

attribute (a-truh-BYOOT)—a characteristic of an object; for example, a stem is an attribute of some arrowpoint types. *See also* type.

B.C. —the abbreviation of "before Christ"; in measuring time, this means years before the birth of Christ.

B.C.E.—the abbreviation of "before the common era; this means the same as B.C.

B.P.—the abbreviation of "before the present." In scientific radiocarbon dating, this means before a date set at 1950. When we say "ten years ago" we are also measuring time in years "before the present."

band—a small social group consisting of two or more nuclear families; a band is usually territorially based rather than being based in one permanent place, such as a village; many hunting and gathering groups lived in bands.

bedrock (BED-rahk)—the layer of solid rock that lies under the soil. If the soil has eroded away, the bedrock may be exposed on the surface.

Behrens (BEH-rinz) **homesite**—a German Texas farm site in the LBJ park.

Belle (bel)—one of La Salle's ships, the *Belle* was wrecked in Matagorda Bay and is now an internationally known archeological site.

bison (BY-suhn)—the correct name for the American animal usually called a buffalo.

bison (BY-suhn) **antiquus** (an-TIK-wuhs)—an extinct bison that was much larger than the modern bison.

board (bohrd) **and batten** (BAT-uhn)—this is a type of construction for the outer walls of wooden houses; the walls are formed of wide, vertical boards with a narrow strip of lumber nailed over each place where the wider boards are joined.

botanist (BAHT-uhn-ist)—a scientist who studies plants.

breechclout (BREECH-klawth)—a brief garment worn draped about the hips of a person.

burned-rock (bernd rahk) **midden** (MID-uhn)—a heap of fire-blackened and fire-cracked rocks that were removed from a cooking pit and piled around the edges of the pit.

C.E.—the abbreviation of "common era"; this means the same as A.D.

Cabeza (kah-BAY-suh) **de** (day) **Vaca** (VAH-kuh)—the first Spaniard to travel in the interior of Texas.

Caddos (KAD-ohz)—a group of Indians who lived in settled villages in Northeast Texas during the Late Prehistoric period and into the historic period.

Castroville (KAS-troh-vil)—the name of one of many different styles of dart points made by people during the Archaic period.

catalogue (KAT-uh-lawg)—an artifact is catalogued when it has been given a number that tells exactly where in the site that artifact was found.

ceramics (ser-AM-iks)—any deliberately fired clay artifact, such as ceramic vessels. Archeologists usually use this word, instead of *pottery*, as a category for fired-clay wares, because *ceramics* refers to all kinds of fired-clay artifacts, from prehistoric pots to modern porcelain, from fired-clay figurines to ceramic door knobs.

ceremonial (sehr-uh-MOHN-ee-uhl) **center** — a place where people gather to observe rituals and rites that are part of their spiritual beliefs.

chain mail—a kind of flexible armor made of interlocked rings of metal. Chain mail was worn by some of the early Spanish explorers in Texas.

chert—a type of hard, smooth stone that ranges in color from gray to pink and even purple. Chert was often used by prehistoric people for making arrowpoints, knives, and other stone tools.

Cheyennes (shy-ANZ)—a Plains Indian group that became allies of the Comanches and other Southern Plains Indians in the late 19th century.

Christianize (KRIS-chun-yz): to convince someone to adopt the Christian religion.

chronology (krahn-AHL-uh-jee)—an arrangement of events in the order in which they occurred.

Clovis (KLOH-vis)—the name of the oldest known projectile point found in Texas. Clovis points were made by Paleoindians about 11,500 years ago. The people who made these points are identified as the Clovis culture.

Coahuiltecans (Koh-uh-weel-TAY-kuhnz)—the name given to the many bands of Indians who were hunters and gatherers and who lived in south Texas and northern Mexico at the time of European contact.

Comanches (koh-MAN-cheez)—a group of Plains Indians who moved into Texas in about 1700. Today the headquarters of the Comanche tribe is in western Oklahoma.

comparative (kum-PEHR-uh-tiv) **analysis** (uh-NAL-i-sis)—to study one thing by comparing it to another similar or opposite thing. Comparative analysis is very important to the science of archeology.

Contact (KAHN-takt) **period** (PEER-ee-uhd)—the time from the arrival of the first Europeans (about 1500) until the Spaniards began to build missions in the state (about 1700) is called the Contact period.

contour (KAHN-toor) **lines—**the curvy lines on a topographic map that are used to show elevations and relief. The interval between the lines is a set distance that measures vertical spacing. For example, if the contour interval is 10 meters and two contour lines appear very close together, the lines show that the land rises (or falls off) very steeply. If the contour lines are far apart, they show that the land goes up (or down) 10 meters over a long distance. That is why contour lines are few and far between on a topographic map of the plains—and very close on a map of the mountains.

contract (KAHN-trakt) **archeology**—archeology that is contracted by private firms or the government for projects that must conform to local, state, or federal laws.

Coushatta. *See* Alabama-Coushatta.

cultural (KUHL-cher-uhl) **remains** (re-MAYNS)—anything that was made or used by humans. Cultural remains include many things besides tools. Some examples are the burned rock in a hearth, the remains of an adobe wall, a pit where trash was buried, and paintings on the walls of caves.

crossbow —a special bow with a mechanical device that made it shoot with much greater force than a common bow.

culture (KUHL-cher)—a group of people who speak the same language and have the same customs and way of life from generation to generation. When archeologists find the same kinds of artifacts, made in the same styles, and evidence of the same type of lifeways (such as hunting and gathering) in sites that cover long periods of time, the people who made those artifacts are identified as a culture (such as the Folsom culture).

curation (kyoo-RAY-shun)—taking care of a special collection, such as a collection of artifacts.

Danz (danz) **homesite**—a German Texan farm site in the LBJ park.

diameter (dy-AM-uh-ter)—the length of a straight line through the center of an object; diameter is often used as a measurement for circular or ball-shaped objects.

domesticate (duh-MES-tuh-kayt)—the act or process through which people cultivate or raise plants and animals for use by people.

Edwards chert (ED-werdz chert)—a Central Texas stone prized for making projectile points and other stone tools.

Elephas (EL-uh-fuhs) **columbi** (kuh-LUHM-by)—an extinct member of the elephant family. Mammoths are one example of extinct elephants.

ethnohistory (eth-noh-HIS-tuh-ree)—the study of the development of past cultures. Ethnohistorians study documentary sources to learn more about past peoples and how they lived.

excavate (eks-kuh-VAYT)—in archeology, *to excavate* means to investigate a site through a careful, scientific digging process.

excavation (eks-kuh-VAY-shun) **unit.** The mapped and measured square in which excavation is done.

flint—this name is often applied to any hard, fine-grained stone, such as chert or agate, used for making arrowpoints and similar tools. *See also* agate; chert.

flintlock—a gun or pistol used in the 17th and 18th centuries; a piece of flint, for striking a spark, was used in the firing works of these weapons. The small squares of flint are often found in French and Spanish Colonial sites.

Folsom (FOHL-suhm)—the name of the style of Paleoindian spear or dart point that was made after the Clovis point. Folsom points were made by Paleoindians of the Folsom culture.

Fort Clark—located near the town of Brackettville in Kinney County, this frontier fort was founded in 1852; the Seminole Negro Indian Scouts village was located near this fort.

Fort Concho (KAHN-choh)—a federal frontier fort in Tom Green County that was established in 1867 and operated until 1889.

Fort Duncan (DUHN-kuhn)—located in Maverick County, this frontier fort was established in 1849; Seminole Negro Indian Scouts served here.

Fort St. Louis. *See* La Salle.

Fresno (FREZ-noh)—the name of one of the many styles of arrowpoints made by Late Prehistoric people in Texas.

genetics (jin-E-tiks)—the study of genes, a special material in human and animal cells. Genes determine our physical appearance.

geographic (jee-oh-GRAF-ik) **coordinates** (koh-OR-di-nuhts)—points on a map that can be used to provide location; the system of latitude and longitude can be used as coordinates on a topographic map to mark the location of an archeological site.

geologist (jee-AHL-uh-jist)—a scientist who studies the history of the earth and its landforms, such as mountains, canyons, and plains.

Great Plains—a geographical region of high, level land that extends from Canada to Texas, in the center of North America. Except for wooded river valleys, the plains are mostly grasslands.

grid—in archeology, a grid is a system of squares, made of string attached to stakes, placed over a site. The grid lets the archeologist record

areal location in the site during excavation. One point in the grid is a permanent datum point (usually a piece of steel rod) that is left buried at the site. A future archeologist can use that datum point to establish exactly the same grid over the site.

hearth (harth)—any place where pits, stones, or burned soil remain in place to show where people once built a fire.

Historic (his-TOHR-ik) **period**—archeologists call the time after European contact in North America the Historic period.

historic preservation—a term once associated only with restoring and protecting old buildings or structures of the historic period, but now used by people in heritage-related fields to include all types of cultural resources, including archeological sites (both prehistoric and historic).

in situ (in SI-too)—when an artifact is found in place in an archeological site, archeologists say the artifact was found *in situ.* If a site has been disturbed, the artifacts in the site may no longer be in situ.

irrigate (EER-uh-gayt)—to supply water to land or crops by artificial means, such as digging canals from a river. Farmers who irrigate their crops do not have to depend on rainfall.

jacal (hah-KAHL)—a small house built of upright sticks daubed with mud and having a thatched roof.

Jumanos (hoo-MAH-nohz)—a bison-hunting people who lived in the Trans-Pecos region and adjoining areas of Texas at the time of European contact.

Karankawas (kuh-RAHN-kuh-wuhz)—a group of hunting and gathering Indians who were living along the Gulf coast in southern Texas at the time of European contact.

Kickapoos (KIK-uh-pooz)—an Indian group that moved down from the northern United States and into Mexico, and then moved into Texas after Texas became a state. Kickapoos still live along the border near Eagle Pass, Texas.

key. *See* map key.

Kiowas (KY-uh-wuhz)—a Plains Indian group that made peace with the Comanches and became their allies in the late 18th century. Their historic range extended into the Texas Panhandle.

Kiowa-Apaches—an Indian group culturally related to the Lipan Apaches; they joined the Plains Indian group known as the Kiowa and entered Texas in the late 18th century. The Kiowa and the Kiowa-Apaches became allies of the Comanches, and their historic range extended into the Texas Panhandle.

kill site—an archeological site that contains the remains of animals and the tools that prehistoric peoples used in killing those animals.

Lafitte (lah-FEET)—a Frenchman and a famous pirate, Jean Lafitte built a fortified house on Galveston Island in the early 19th century, when Galveston was still part of Spanish Texas; this compound was called Maison Rouge.

Laredo (luh-RAY-doh)—a city on the Texas-Mexico border that dates from the late Spanish Colonial period.

La Salle (lah SAHL)—the early French explorer who established an early settlement, called Fort St. Louis, near the Texas coast. His name was Robert Cavalier, and his title was Sieur de La Salle.

Late Prehistoric (pree-his-TOHR-ik)—the last period of prehistory in Texas. The Late Prehistoric period began when people began to use the bow and arrow, make pottery, and practice agriculture. This period ended when Europeans came to Texas and the Historic period began.

lifeways (LYF-wayz)—the pattern of living that a cultural group follows. Lifeways include the things that people do in order to get food and to use other natural resources. For example, moving about from place to place in search of wild plant foods is part of a lifeways pattern.

Lipan (li-PAHN) **Apaches** (uh-PACH-eez)—the group of Apaches known as the Lipan were bison hunters in the Texas Panhandle at the time of European contact. A few Lipan now live in New Mexico.

loincloth (LOYN-clawth). *See* breechclouts.

majolica (muh-HOH-li-kah)—a pottery made by the Spanish; early majolica is often blue and white, but other colors also were used; tin was used in the glaze, and majolica looks very different from Native American pottery.

mano (MAH-noh)—a rough stone (such as an oval piece of sandstone) that is held in the hand and used to grind seeds or other foods against a grinding stone (metate).

map key—the part of a map (usually inset, in a box, or printed in the margins) that gives the meanings of any symbols or abbreviations that are used in the map.

material (muh-TEER-ee-uhl) **culture** (KUHL-cher)— the structures, tools, and other artifacts that are the material remains of past peoples.

material (muh-TEER-ee-uhl) **remains** (ree-MAYNZ)—any remains of a past culture, including items made or used by the people who once occupied an archeological site. For example, stone tools, pottery sherds, and fire-cracked rock from a hearth are material remains.

metate (muh-TAH-tee)—a slab of rough stone (such as sandstone) used with a mano (hand-held grinding stone) to grind seeds and other foods.

midden (MID-uhn)—any place where past people heaped trash, food remains, or other discarded items. Shell middens are common along the coast, and burned-rock middens are common in central Texas.

mission (MISH-uhn)—a Spanish Colonial settlement for Christianizing the Indians of a region; the settlement included a mission church and Indian quarters.

Montell (MAHN-tel)—the name of one of many different styles of dart points made by people during the Archaic period.

Nacimiento (nah-see-mee-EN-toh)—a village in northern Mexico that was settled by the Seminole Negro Indian Scouts. Their descendants still live there.

Nacogdoches (na-kuh-DO-chis)—French trade with the Indians of this locale in the early 18th century led the Spanish to establish missions here, to keep the French out of Texas; the settlement that grew around the missions played an important role in early Texas history.

natural forces—any force not controlled or directed by people. Natural forces include wind and rain, which can disturb an archeological site and eventually erode it completely away.

nomadic (NOH-mad-ik)—a word, derived from nomads, describing people who move about from place to place (usually within a defined territory) in search of food instead of building permanent shelters and settling in villages.

non-renewable (NAHN-ree-NYOO-uh-buhl)—something that cannot be duplicated or

replaced is nonrenewable. Archeological sites are nonrenewable cultural resources.

north arrow—an arrow-shaped pointer on a map that shows the direction of magnetic north (magnetic north is the direction as it would appear on a compass).

ocher (OH-ker)—a type of iron ore (usually red or yellow in color) that is commonly used as a natural pigment, or paint color; red ocher was used to make the red paint used in most rock art sites in Texas.

olive jar—a heavy ceramic vessel used for shipping olive oil; sherds of olive jars are often found in Spanish Colonial sites.

oral (OHR-uhl) **tradition** (truh-DISH-uhn)—knowledge that is passed from one person to another and one generation to another by the spoken word. Cultures that have no written language must depend on their oral tradition to preserve the history and myths of their people.

Paleoindian (pay-lee-oh-IN-dee-uhn)—the earliest known human inhabitants of North America, including prehistoric Texas.

paleontologist (pay-lee-uhn-TAHL-uh-jist)—a scientist who studies the history and lifeways of extinct animals through the fossilized remains of animal bones.

Pedernales (ped-er-NAH-les)—the name of one of many different styles of dart points made by people during the Archaic period.

pemican (PIM-uh-kuhn)—meat dried and ground with nuts or berries.

Perdiz (per-DEEZ poynt)—the name of one of the many styles of arrowpoints made by Late Prehistoric people in Texas.

perishable (PEIR-ish-uh-buhl) **artifact** (AR-tuh-fakt)—an artifact made of wood, plant fiber, or some other material that will not last long after the item is discarded.

petroglyph (PET-roh-glif)—a type of rock art created by engraving, or incising, the design on on a natural rock face.

pictograph (PIK-toh-graf)—a type of rock art created by painting the design on a rock face.

Plains Indians—the term applied to Indian cultures of the High Plains who lived mostly by hunting bison. Comanches and Apaches are Plains Indians.

Plainview (PLAYN-vyoo)—the name of a late Paleoindian spear point. Plainview points were made by Paleoindians of the Plainview culture.

pothunter—a person who digs in archeological sites and collects archeological objects for fun or profit.

pottery—any vessel, such as a bowl or jug, made of moist clay and then hardened by firing. The kind of pottery made by Native Americans is called coarse earthenware because it was fired over an open fire and is not as hard as pottery fired in a kiln. A pottery kiln is a special kind of oven with a very hot fire.

pottery sherd—a piece, or fragment, of a pottery vessel. More sherds than whole vessels are found in most archeological sites.

prehistory (pree-HIS-tohr-ee)—the time before written history; in Texas the prehistoric period ends with the arrival of the first Spanish explorers in the 16th century.

presidio (pruh-SID-ee-oh)—the Spanish word for fort; the surviving Spanish forts in Texas are still called presidios.

projectile (proh-JEK-tuhl) **point** (poynt)—a sharp tip for a spear, dart, or arrow. Prehistoric people made their projectile points of stone.

provenience (proh-VEEN-ee-uhns)—the location of material remains in an archeological site according to their horizontal and/or vertical position in relation to a set of spatial coordinates. Spatial coordinates include grid square, unit number, and level. Location data

is supplemented by supplemental notes and photographs. For example, significant remains are usually photographed in situ.

pueblo (PWAY-bloh)—an Indian village with closely clustered, apartment-like houses usually made of adobe brick or stone. The best-known builders of prehistoric pueblos are the Indians of New Mexico and Arizona.

quarry (KWAR-ee) **site**—a place where prehistoric people dug or collected stone for making stone tools.

random (ran-DUHM) **sample**—a selection of items that has no regular plan or pattern; for example, an archeologist may decide to do a detailed study of only a random sample of 100 flakes from a large collection of flint flakes. A simple way to get this random sample is to number all of the items, write the numbers on slips of paper, shake up the slips in a container, and then draw out 100 slips; today, computers can select a random sample from a list of item numbers.

redoubt (REE-dowt)—a small, usually temporary defensive work, especially one used to defend a hill or pass.

repository (ree-PAHZ-uh-tohr-ee)—a special place, like a museum, where artifacts can be properly curated. *See also* curation.

rockshelter (RAHK-shel-ter)—a natural recess in a stone canyon wall or a shelter formed by fallen boulders. Some prehistoric peoples lived in rockshelters.

Salvage (SAL-vij) **archeology**—excavations carried out to save as much of a site as possible in a short period of time.

Sauer (sour) **homesite**—a German Texan farm site in the LBJ park.

scale—a statement of the relationship between actual measurement and the distance shown in a map, chart, plan, or photograph. For example, if the scale of a map is "1 cm = 1 km," then 1 centimeter on the map is equal to 1 kilometer of actual distance.

Scallorn (SKAL-ern)—the name of one of the many styles of arrowpoints made by Late Prehistoric people in Texas.

sedentary (SED-uhn-ter-ee)—archeologists say that people were sedentary if they lived in one place and grew their own food, rather than moving about from place to place in search of wild foods.

Seminole (SIM-uh-nohl) **Negro Indian Scouts**—the Seminole Negroes were associated with the Seminole Indians in Florida, Oklahoma, and Mexico. Members of this unique culture served as U.S. military scouts in Texas in the late 19th and early 20th century.

shaman (SHAY-muhn)—a priest or ceremonial leader who uses magic to cure the sick, foretell events, and communicate with the spirit world.

shell (shel) **midden** (MID-uhn)—a place where mussels, clams, or oysters were collected and eaten, and the shells discarded by people. Most shell middens were formed in places where people returned season after season, year after year, to camp in the same places along the coast.

sherd. *See* pottery sherd.

Sioux (soo)—the Sioux, like the Comanches, were Plains Indians. The Sioux lived farther north on the plains, not in Texas.

site. *See* archeological site.

site form—also sometimes called "site survey form" or "site data form"; these terms refer to the forms that archeologists fill out when they record a site. When the form has been completed, a permanent site number is

assigned and the form is placed in an archeological repository.

site map—a map prepared by an archeologist to show the locations of features and excavations units in an archeological site.

social center—any place where people meet in groups to act as a government, to perform ceremonies, or to carry out other activities.

sotol (SOH-tohl)—a desert plant of Mexico and the Southwestern United States. The sotol plant has slender, pointed leaves. When the sotol blooms, a stalk rises up from the center of the cluster of leaves, much like the stalk of a century plant.

Spanish (SPAN-ish) **Colonial** (kuh-LOHN-ee-uhl) **period**—part of the Historic period, after about 1700 until the end of Spanish rule in Texas (about 1800).

specialize (SPESH-uhl-yze)—to develop a special skill. In prehistory, people who were hunters and gatherers usually did not have the need to develop special skills. For example, some hunters and gatherers did not use pottery, and others used only a few simple pots. When people settled in agricultural villages and their groups or bands contained more members, they had the time and the need to become specialists, such as tool makers, pottery makers, weavers, or religious leaders.

special sample—any sample of remains from an archeological site taken for special scientific tests. For example, a carbon sample can be used for radiocarbon dating, and a pollen sample can be used to identify plants.

stem—beginning in Archaic times, some projectile points were made with stems at their bases, where the points were attached to shafts for use as darts or arrows.

strata (STRA-tuh)—layers of soil in an archeological site, each layer being different in texture and color from the soil above or below it. Cultural remains and natural sediments become buried over time; the layer on the bottom is the oldest, the layer on top is the youngest. Strata may be formed by natural forces (such as erosion) or by human activities (such as discarding ashes and fire-cracked rock from fires).

stratigraphy (struh-TIG-ruh-fee). *See* strata.

symbolic (sim-BAHL-ik)—not having a literal meaning, or having a meaning other than the obvious literal meaning. For example, a spur (like those used by cowboys) can be used to symbolize, or stand for, a basketball team.

test unit—a small excavation for determining the significance of an archeological site. *See also* excavation unit.

Texas Centennial (sin-TIN-ee-uhl)—the 100th anniversary of the Texas Revolution, when Texas became a republic.

Tigua (TEE-gwuh)—a group of puebloan Indians from New Mexico who moved to a Spanish mission in El Paso in the late 1600s. The Tigua still live in El Paso, in a pueblo called Ysleta.

timeline—a visual representation of events in chronological order.

Tonkawas (TAHN-kuh-wuhz)—a group of bison-hunting Indians who lived in central Texas during the Historic period. A few Tonkawas now live in Oklahoma.

topographic (toh-poh-GRAF-ik) **map**—a map that accurately depicts the physical features and relief of an area. Relief—or how hilly or flat the land is—is shown on the map by contour lines. *See also* contour lines.

trade beads—glass beads made in Europe and traded to the American Indians of the Historic period.

travois (TRAV-wah)—poles rigged as a sort of sled, usually with a cover made of animal hides, to be pulled behind a dog or horse.

turquoise (TER-kwoyz)—a bluish green gemstone, usually from New Mexico or Arizona. Beads of turquoise were important prehistoric trade items and have been found in many archeological sites in Texas.

type—in archeology, a characteristic is called an attribute, and a set of objects with similar attributes is called a type. For example, arrowpoints that have a set of similar attributes may be defined as a type and given a name, such as Perdiz point.

unit. *See* excavation unit. *See also* grid.

Wichitas (WICH-i-tahs)—a group of Indians living in north-central Texas during the early Historic period. The Wichita tribal group now lives in Oklahoma.

PART II

Activities

"We believe that sharing archaeology with the public has many positive benefits. In the classroom, archaeology can be used to promote cultural awareness and sensitivity. It also can provide a means of teaching critical thinking, cooperative learning, problem solving, and citizenship skills."

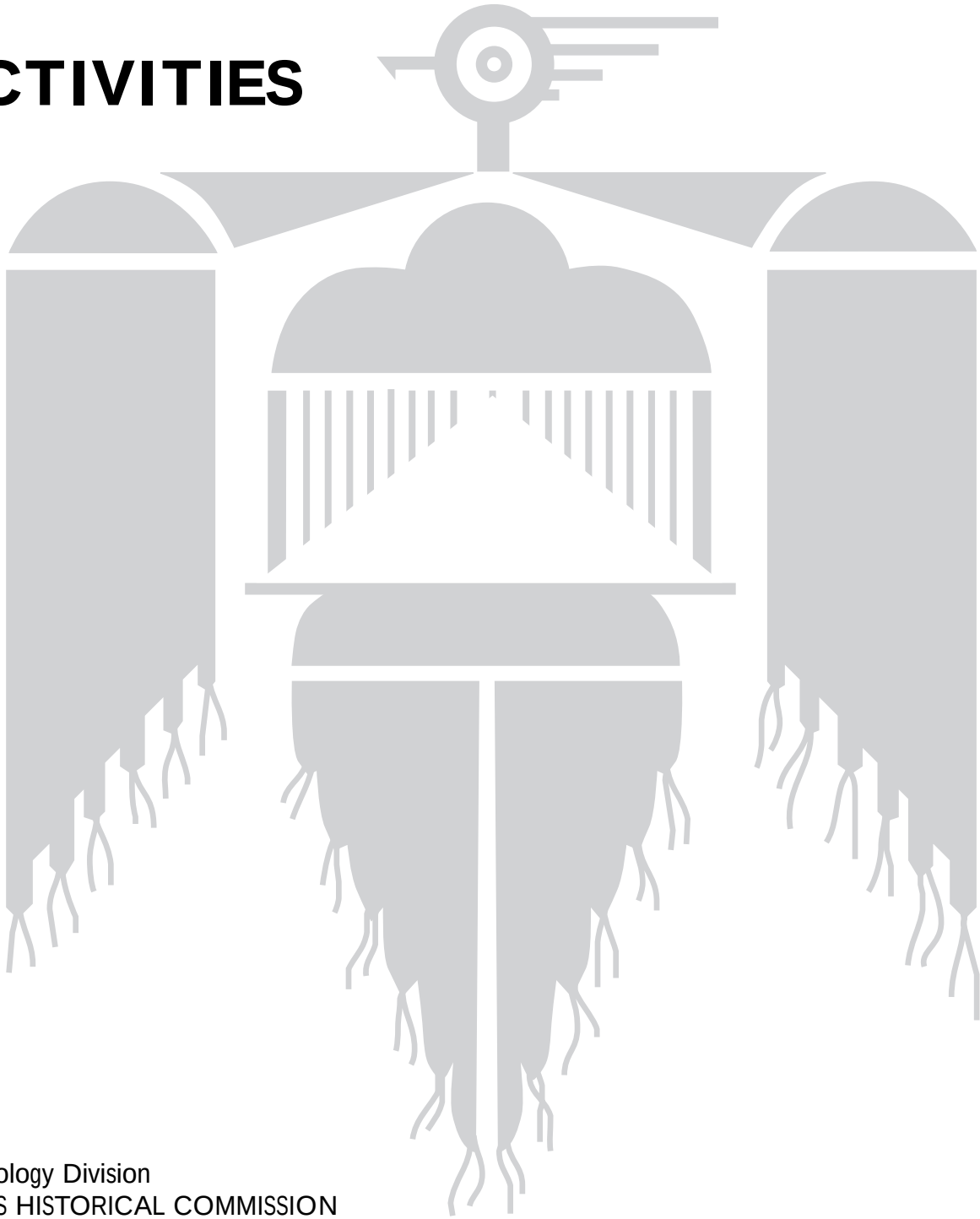
Society for American Archaeology
Archaeology and Public Education 6(1)

Historic preservation is "an excellent springboard for introducing concepts like scientific inquiry, the issues and ethics of conservation, cultural diversity, and problem solving. Recognizing the historical significance of ordinary objects helps young people make a personal connection to the past, and promotes respect for other people."

U.S., Department of the Interior
National Park Service
Our Fragile Legacy (brochure, 1997)

Archeology in the Classroom

ACTIVITIES



Archeology Division
TEXAS HISTORICAL COMMISSION
Austin 1998

Preface

These classroom activities are intended as an introduction to the basic methods and concepts of scientific archeology for teachers and students (primarily grades 4 through 7). Teachers may photocopy without permission any or all of this section for classroom use only. Other use of this material requires permission from: Archeology Division, Texas Historical Commission, P.O. Box 12276, Austin, TX 78711-2276.

Because of the nature of archeology, some of the technical and cultural terms used may be new to young readers. An attempt has been made to identify some of the most troublesome terms and "highlight" them in **boldface** type. Definitions of terms that appear in boldface, as well as the definitions of other technical terms, are included in the Glossary at the end of Part I.

We are deeply indebted to the teachers who have allowed us to use or adapt their work for inclusion here. We wish to acknowledge also the Society for American Archaeology's newsletter, *Archaeology and Public Education,* which includes lesson plans developed and classroom tested by teachers. This compilation of activities would not have been possible without these teachers—and there would be no point in it without the participation of classroom teachers all across Texas.

Teaching Archeological Time Periods

Adapted from an activity plan by Deborah Butler Hannus, in *Insight*, Vol. 4 (Fall 1990), p.5 (Newsletter of the Educational Services, Texas State Historical Association, Austin).

Rationale

Why teach archeological time periods? In the teaching of mathematics, it is understood that the multiplication tables must be mastered before more advanced problems can be solved. In the teaching of archeology, the concept of prehistoric time periods must be understood before students can understand the time periods of past cultures.

Objective

To understand the major time periods of prehistory as the framework in which studies of prehistoric cultures are made.

Age Level

Grades 4 through 7.

Special Materials

Copies of handout (on reverse of this page)

Time Required:

15 to 20 minutes for background discussion or reading; 30 to 40 minutes for activity and follow-up discussion.

Background—

What Are Archeological Time Periods?

American Indians had lived in the New World for thousands of years before European contact (about 500 years ago). Because the first Americans had not developed a written language, the time period in North America before the arrival of the Europeans is called "prehistoric."

North American prehistory is divided into three periods: Paleoindian, Archaic, and Late Prehistoric. The years after European contact are called "Historic." While information on prehistoric times is limited, some lifeways have been defined through archeological investigations.

For more extensive background information, see Part I of this unit for teachers.

Procedures—

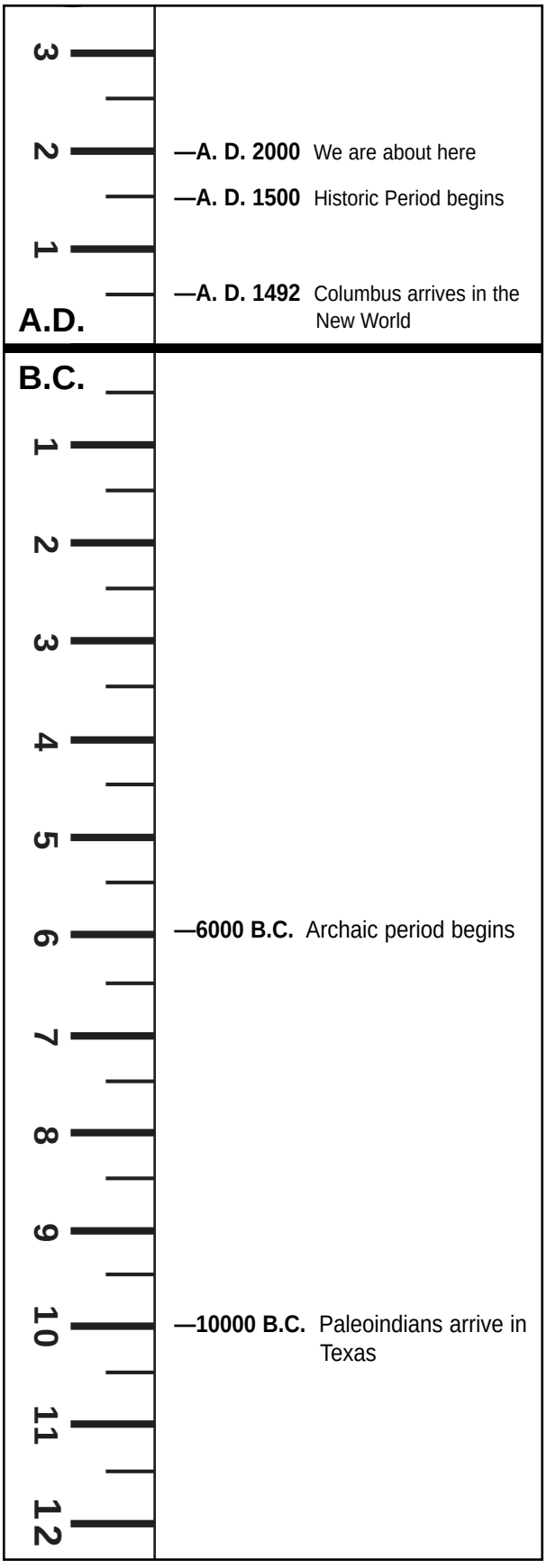
How Can Time Periods Be Taught?

1. Before initiating this activity, prepare a bulletin board to represent a profile of archeological strata. Each stratum in the profile should represent one of the four time periods, with the most recent at the top. Use the drawing of site strata in the Background section of this unit as your model (see figure in Part I, "How Archeologists Work").

2. Begin with "Prehistoric Time Periods" (on reverse of this page). Together, read about, and then discuss in detail, the four archeological time periods.

3. Divide the class into four groups and assign each group a different time period. Each of the groups is then asked to list several artifacts that might be found in their stratum or time period. For example, a stratum for the Archaic period might contain projectile points, a *mano* and *metate,* animal bones, and stones for a hearth (replicas of objects to be placed in the bulletin board "strata" can be made of construction paper).

4. After each group has come up with artifacts for their time period, the students label the period and supply the approximate dates. The completed bulletin board is a good visual teaching tool to help the students remember archeological time periods.



MEASURING PERIODS OF TIME

There are different ways of talking about time. Scientists sometimes use **B.P.** ("before the present"), which simply means before a set date in the modern period (A.D. 1950). When we say "about 12,000 years ago," we are also talking about time before the present.

To talk about the dates of time in the past, we also use the terms **A.D.** and **B.C.** A.D. means "anno Domini" (or "in the year of our Lord"). B.C. means "before Christ." When you say "I was born in 1987," you do not have to use A.D. because everyone understands what you mean. When we say, "The Archaic period of prehistory in Texas lasted from about 6,000 B.C. to A.D. 500," we have to use the abbreviations for the dates to make sense.

Some scientists use the abbreviations **C.E.** and **B.C.E.** In this system, C.E. stands for "Common Era" but refers to the same time period as A.D. And B.C. E. ("Before the Common Era") refers to the same time period as B.C. Most scientists, historians, and teachers still use A.D. and B.C.

Imagine that A.D. and B.C. are ways of measuring time on two rulers marked with the inches in opposite directions. One ruler measures years before the birth of Christ and the other measures years after the birth of Christ.

The illustration here shows prehistoric and historic periods in the A.D. and B.C. time scale. Each inch mark on the rulers stands for 1,000 years.

Using the "time ruler" makes it easy to see that the Paleoindian and Archaic periods were much longer than the Historic period. It is also easy to see that the Indians were here for thousands of years before the coming of European explorers and settlers.

If you know about the time periods of the dinosaurs, it is also easy to see that human beings have inhabited the earth for a very short period of the planet's history.

CHRONOLOGY—

The Time of My Life

Reprinted from *The Intriguing Past: Fundamentals of Archaeology* (U.S. Department of the Interior, Bureau of Land Management).

Rationale

In their study of **chronology** the students will use personal **timelines** and an activity sheet in an activity involving discussion, problem solving, analogy, and forecasting.

Objectives

• Attempt to order a classmate's timeline and demonstrate the importance of intact information to achieve accuracy.

• Compare their timelines with the chronological information contained in a stratified archeological site.

• Test the following skills: knowledge, comprehension, application, analysis evaluation

Age Level

Grades 4 through 7.

Special Materials

Ten strips of colored paper, scissors, glue, ruler for each student;

Copies of "The Time of My Life," "The Life of _____," and "Stratigraphic Section" activity sheets for each student.

Time Required

15 to 20 minutes for background discussion or reading; 30 to 40 minutes for activity/discussion.

Background

The proper sequence of events must be known when trying to understand the past. Chronological order means that events are arranged in the order of occurrence, establishing a chronology. One way to display events visually in chronological order is with a timeline. A timeline is divided into equal time segments (month, year, or century, for example), with one end representing the oldest events and the other end the most recent events.

Chronology is something we all use everyday. When somebody tells us a story or when we watch a news report, it only makes sense if we can understand the story as it happened. Archeologists always try to establish the age of the sites, artifacts, or events they are studying so that they can place them in chronological order. Each piece of information contributes to understanding the overall story of the past, but only if the information can be placed in chronological order.

Archeological data are often buried. Sites become buried by the deposition of small-grained particles (sand or dirt) through the action of wind, gravity, and water. When archeologists dig a site, they record the location of what they find, so that chronological order can be established. Objects discovered at the bottom of pits dug by archeologists are the oldest, while those near the surface are the youngest.

When vandals and artifact-seekers dig a site or collect artifacts from the surface, they remove objects which could place the site in time, and therefore, the archeologist cannot learn the site's chronological placement. Vandals mix the stratigraphic layers together and archeological events cannot be placed in order. A page of the past has been torn up and thrown away, destroyed forever.

Everyone can help stop this problem by not digging in sites or collecting artifacts, by refusing to buy artifacts from people who dig and destroy sites, and by reporting people they see digging and collecting artifacts on public land to law enforcement officials.

Setting the Stage:

Tell the story of Goldilocks out of sequence, leaving some parts out. Ask students to describe the problems with the story. Why is it important to relate sequential information, including all the important details?

Procedure

1. Define chronology and state the necessity of establishing chronological order when studying the past. Assign each student a teammate for exchanging timelines.

2. Have the students list ten events in their lives, one on each of the ten strips of colored paper. Next to each event, students list or draw an object that might symbolize that event. These events should not have obvious time links, such as "my eighth birthday party," or "I started 4th grade." The events could be things like "my sister was born (rattle)," "the family moved (moving van)," "we went to Yellowstone on vacation (tent)." Students should try to include events from their entire lives.

3. Students then shuffle their strips and exchange them with another student, who tries to lay the strips out in correct chronological order with the most recent at the top.

4. The two students who have exchanged strips then tell each other their best guess of the proper chronological order. The strips are then returned to their owners. This is usually a humorous experience for students.

5. Discuss: Were you able to reconstruct the timeline correctly? Why or why not? It is difficult, sometimes impossible, to reconstruct a story if the order of events is not known.

6. Ask students to randomly remove four events from their personal timeline. Ask students if the chronological order would have been more difficult to construct and if the story of their classmate would have been as complete if there were even fewer strips. Connect this activity to archeological sites by stressing how archeological data is usually impossible to place in chronological order if artifact collectors have dug up a site (like mixing up the event strips) or if people have removed artifacts (equivalent to removing some of the event strips).

7. Distribute the "The Life of _____" activity sheet. Students glue their own strips on a piece of backing paper, in chronological order beginning with the most recent event at the top. They can write the year of the event (or they can number the events one through ten) in the column to the left of their strips.

Closure

1. Distribute a copy of the "Stratigraphic Section" activity sheet to each student. Have them lay their timeline next to it.

2. Use the sheet and their timelines to explore the following questions:

   a. What do you notice about the information on the "Stratigraphic Section" activity sheet?

   b. In what ways is the "Stratigraphic Section" activity sheet similar to your timeline? In what ways is it different?

   c. Imagine that you cannot remember significant events in your life. How would that change the history of your life?

   d. Does digging in an archeological site result in the loss of information about the past?

   e. In what ways is a hole dug by vandals in an archeological site similar to a loss of significant events in your life?

   f. In summary, what might you say to an artifact collector about the importance of leaving sites undisturbed?

Evaluation

Have the students complete the "The Time of My Life" activity sheet or use it for a discussion. Or ask the students to present an extemporaneous persuasive speech that defines chronology as used by the archeologist and explain the importance of intact sites for establishing chronological order.

The Time of My Life Activity Sheet Answers

1. Students should express regret, or a feeling of being upset. For someone to shamelessly destroy the only evidence of another's life indicates that they have little respect for the meaning of that person's life.

2. By extension of the previous question, students should link their feelings about destruction of their timeline to destruction of evidence of past peoples' lives.

The Time of My Life: Name: _____

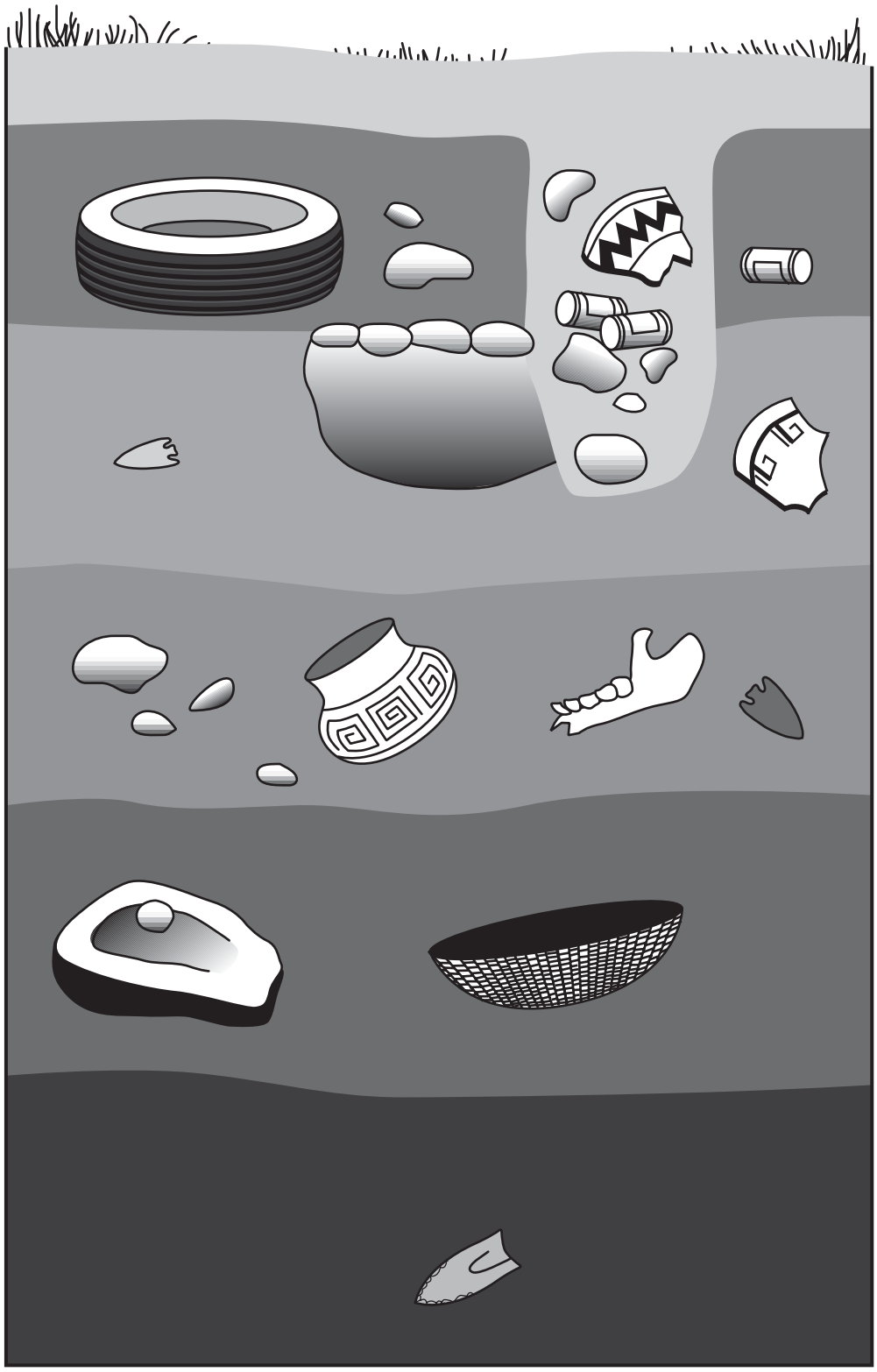
1. Write a short paragraph about how you would feel if your timeline was all that would ever be known of you and somebody tore up part of it.

2. How do you think an archeologist feels when she or he visits a site that has been dug up by vandals?

The Life of _____

Today	

STRATIGRAPHIC SECTION



0–200
YEARS AGO

200–800
YEARS AGO

800–1500
YEARS AGO

1500–8000
YEARS AGO

8000–12000
YEARS AGO

Making and Using Archeological Maps

Adapted from *Archaeologists Use Maps,* by Cynthia S. Bradley, Ricky R. Lightfoot, and Patricia M. Wheat, Crow Canyon Archaeological Center, Cortez Colorado, 1995.

Rationale

Participants work with two maps as examples of the different kinds of maps that are made and used by archeologists, discovering how different parts of a site may be shown on maps.

Objective

To understand the concepts of scale and distance, to understand how a grid is used in mapping, and to provide experience in using metric measurements.

Age Level

Grades 4 through 7.

Special Materials

Copies of handout
Map pencils
Index cards or stiff paper strips for making rulers

Time Required

Allow one classroom period for students to become familiar with "How Archeologists Work" (in Part I of this unit), for general discussion of maps, and to read and discuss the Background for this activity. Allow one classroom period for quick review of the background information and completion of the activity sheets.

Procedure

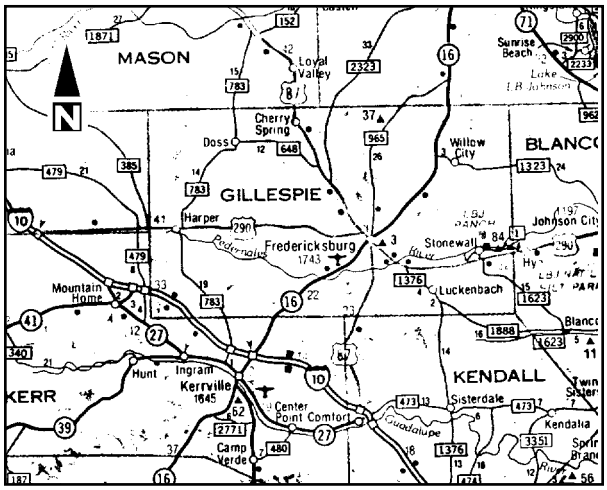
Discuss or have the students read "How Archeologists Work." Briefly discuss maps in general, making the following points. The maps with which we are most familiar (road maps) show distances from one place to another, as well as the locations of places (such as cities, streets, rivers). These maps can also be studied for comparative data; for example, how many counties in Texas contain no large cities. Which counties contain no major rivers?

Anyone can make a map. People often draw maps to show others how to get to their house or work place.

Maps are also made to show special information. A **topographic** map shows land forms as well as man-made structures. This kind of map is useful where there are no streets or roads.

Read aloud or distribute copies of the Background Information for this activity.

(Activity continued on next page)



This is a section of an ordinary roadmap. Maps like this are most useful for finding the locations of towns and the best routes and distances between towns. Compare this to the topographic map on the next page. The "topo" map uses a much larger scale. The scale for this road map is shown below.

One Inch Equals Approximately 23 Miles

0 5 10 20 30 40 50

0 5 10 20 30 40 50

One Inch Equals Approximately 37 Kilometers

Background: How Archeologists Use Maps

Archeologists make and use many different kinds of maps. For example, archeologists use **topographic maps** for recording sites. The exact location of each site is noted on the topographic map of the area.

Site Maps

When a site is excavated, the archeologist uses surveyor's instruments to make an accurate **site map,** showing the location of every **feature** (a feature is a part of the site, such as a hearth or the remains of a structure). The archeologist uses wooden stakes and string to divide the site into measured units. This forms a **grid**, which helps the archeologist keep accurate records of exactly where things are found. Only then is the archeologist ready to excavate.

The archeologist digs in a grid **unit** on the surface and in carefully measured levels downward. Each unit that is being excavated is assigned a number. The location of each excavated area is added to the site map.

In order to show more details, the archeologist may make another map of only part of a site. A separate map may be made of only one feature, such as a house. The map of the house may show only the clues left by the structure itself (such as a ring of stones, or the remains of rotted logs). Another map of the same house may show where each artifact was found inside the structure.

Artifact Distribution Maps

If a great many artifacts are found, the archeologist may make a map for each different kind of artifact. The maps will show the distribution of the artifacts in the site. For example, one map may show the locations of pottery sherds, one map may show food bones, and one map may show stone tools. Or, the archeologist may make one map of the house and use different colors and symbols to show the locations and numbers of the different artifacts.

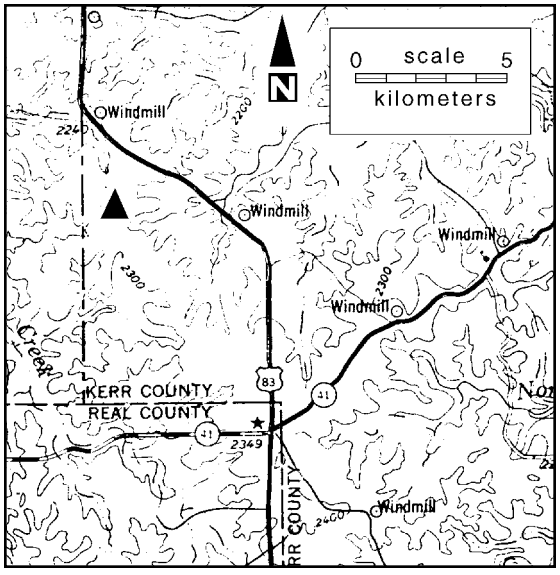
These artifact distribution maps can be clues to special activity areas in a site. Many stone chips, for example, mark the place where stone tools were made.

The Parts of a Map

If symbols (such as triangles or circles), colors, or abbreviations are used on the map, the map must have a **key.** The key shows each item that has a special meaning, and then gives the meaning of that symbol, color, or abbreviation.

Each map must have a **scale,** which is used to measure size and distance within the map. Maps are drawn on graph paper, and each square on the paper is given a distance value; for example, a 1/4 inch square equals one meter. The scale must be shown on each map.

Each map must also have a **north arrow.** If possible, a map should always be drawn so that north is at the top of the map.

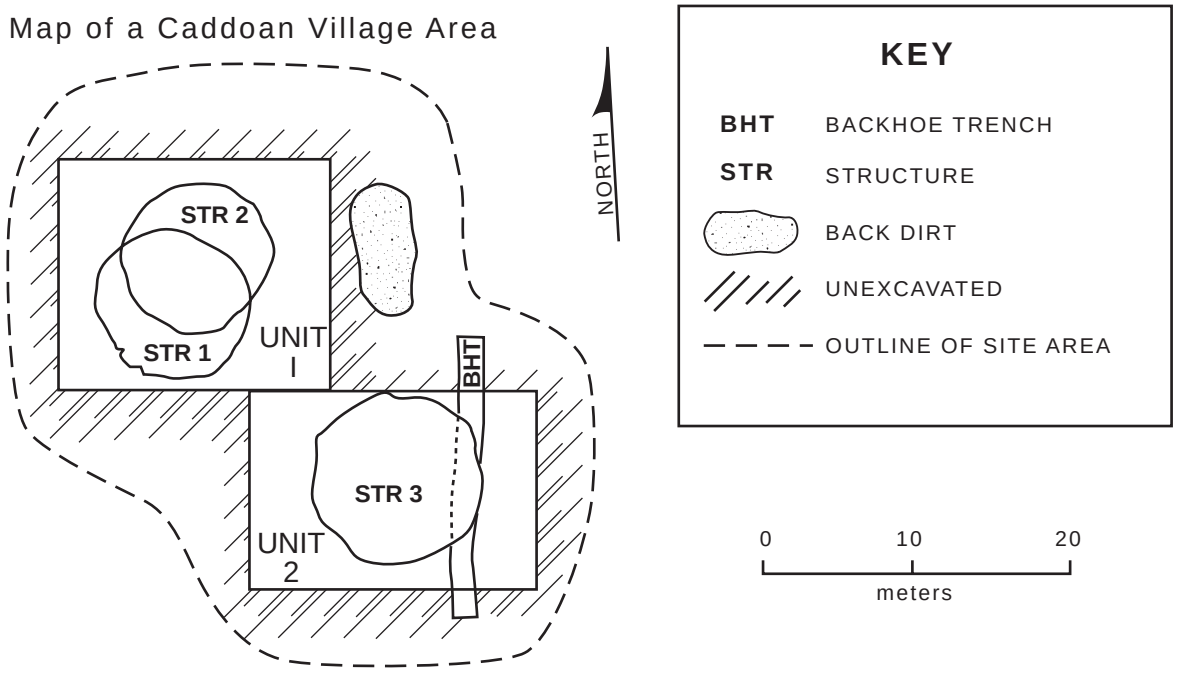


This is a section of a topographic map of central Texas The fine, wavy lines are contour lines, which show elevations in the ground surface. The triangle on the left is the symbol for an archeological site location.

(Activity continued on next page)

Worksheet: A Caddoan Site in East Texas

Map of a Caddoan Village Area



AREA D EXCAVATION PLAN

1. To use the scale at the bottom of the map, make a "scale ruler" by carefully copying the scale on the edge of an index card or a stiff piece of paper. Use your scale ruler to measure:

Greatest east-west dimension of site area:

_____

Greatest north-south dimension of site area:

_____

Diameter of STR 1: _____

Diameter of STR 2: _____

Size of Excavation Unit 1 expressed as square meters: _____

2. Check the statement below that you think is the best explanation for the overlapping of structures 1 and 2:

___ (a) This was the first house these villagers ever built, and they made a mistake by building the houses so close together that the walls overlapped.

___ (b) The archeologist did not have enough room on the map to draw the two houses far enough apart.

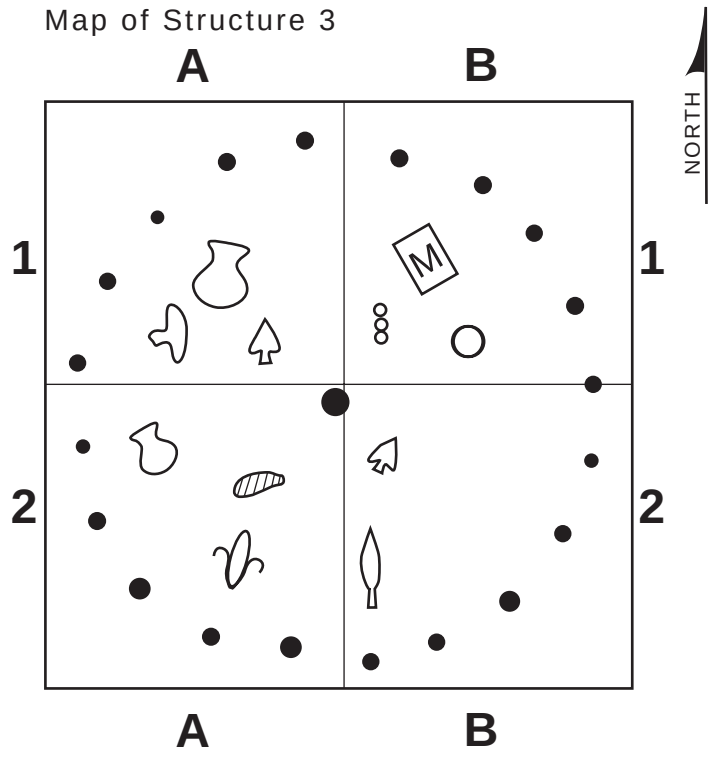
___ (c) People had lived in this village for a long time, and Structure 1 (the house in the upper level) was built at a place where an older house had burned to the ground many years before.

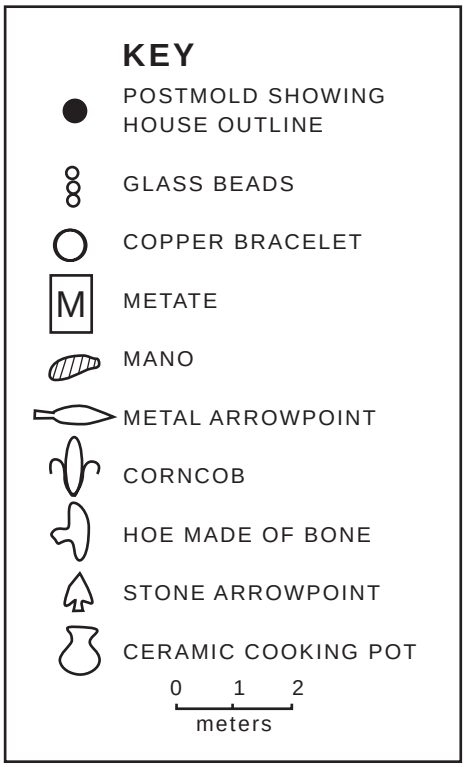
3. Practice making a map key by tracing this map and the map on the next page using colors instead of symbols and abbreviations. Make a "color key" that gives the meaning of each color you used.

(Activity continued on next page)

Worksheet: Excavation of a Caddoan House

Map of Structure 3





1. Use the key to list what was found in each grid square.

Grid Square	***What was found in each grid square:***		
1A	_____	_____	_____
2A	_____	_____	_____
1B	_____	_____	_____
2B	_____	_____	_____

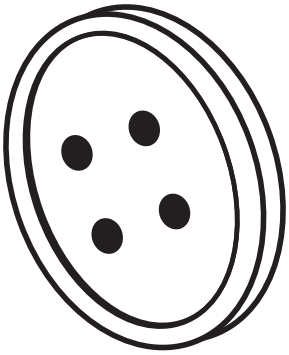
2. What evidence of agriculture was found? _____

3. What evidence of hunting was found? _____

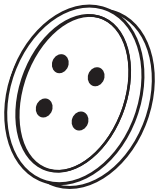
4. What evidence of food processing was found? _____

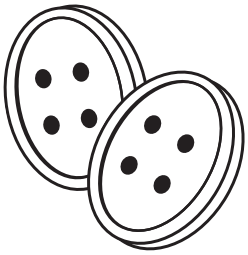
5. What personal items were found? _____

6. Which artifacts are evidence that this is a site that dates from the period of European Contact? _____



Button, Button—Lesson Plan





Adapted from a lesson plan prepared by KC Smith and Lisa Sharik, Museum of Florida History, Division of Historical Resources, Florida Department of State.

Rationale

By taking a close look at the simple and familiar button, students learn how archeologists examine and group artifacts.

Objectives

to classify into sets by **attributes**
to calculate percentages
to make measurements in the metric system

Age Level

Grades 4 through adult

Special Materials

For each participant:

- "Button, Button" student handout

For each group:

- enough buttons of various sizes and materials for each group to have 10 buttons. You can ask the students to each bring in x number of buttons or you can provide enough for the exercise.
- "Button, Button" recording sheet, one per group
- metric rulers with millimeters, one per group

Time Required

Allow 15 minutes to prepare the materials and 30 to 40 minutes for completing the activity.

Background

Archeologists must record information on every artifact they uncover and analyze. Determining how to record an artifact is a difficult process. All artifacts do not fit easily into a specific category, and archeologists may be required to create a category for classifying an artifact. This classification may be based on observable **attributes** or on the artifact's probable function. Measurement is another part of the recording process. Once artifacts have been classified as to a type, information such as length, width, thickness or **diameter** is recorded. Archeologists use the metric system of measurement, since this is the scientific standard around the world. Their work takes them to many different countries, so one standard measurement must be used by all archeologists. Classification and measurement of artifacts are a basic part of the recording process.

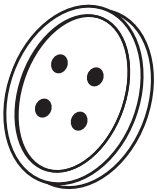
Preparation

Gather enough buttons for the activity or collect the buttons that your students have brought. Divide the buttons so that each group will get a **random sample** of 10 buttons.

Make copies of the "Button, Button" student handout and the recording sheet.

Procedure

1. Distribute the student handout and recording sheets; review the instructions and state how much time the groups will have to complete the activity. Answer any questions. (Note: the data from the worksheet may be placed in a computer spread sheet.)
2. Divide the students into groups of 4 to 6 people.
3. Distribute buttons and rulers to each team and give the signal to begin. Circulate among the teams, offering assistance as needed.
4. Give the signal to stop work and ask the team speakers to report their group's finding to the class.
5. Lead a discussion of the activity, using the questions listed on the student handout as a springboard.



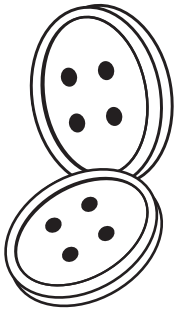
Button, Button—Student Handout

Select someone in your group to read the directions.

DIRECTIONS

1. Select one person to be the recorder-reporter. The recorder-reporter should be prepared to tell the entire class about this activity and its results. This individual also can participate in the activity.

2. Your task is to sort your collection of buttons into sets with similar characteristics. In archeology, a characteristic is called an attribute, and a set of objects with similar attributes is called a type. Before sorting begins, be sure to select several attributes to use as a basis for grouping the buttons into types. There are no right or wrong groupings, and there may be just a few or many types when the sorting is completed.

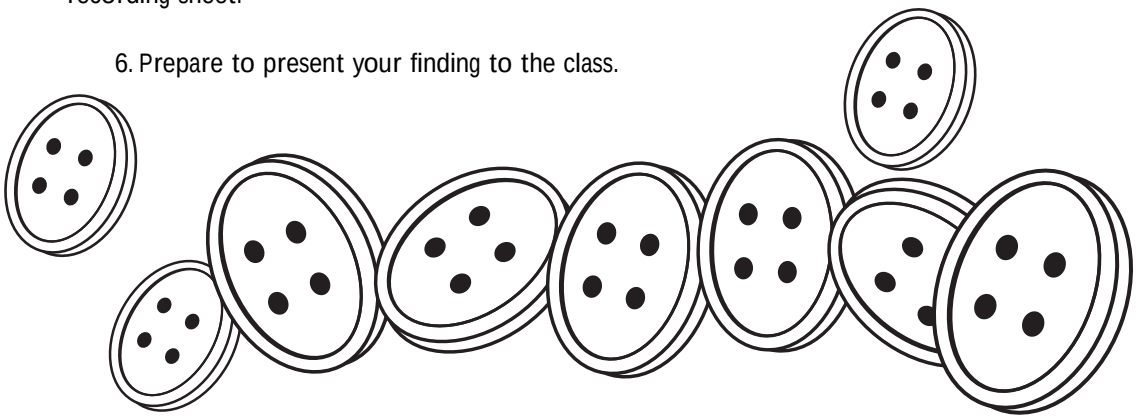


3. As you are working with the buttons, think about the following questions:
   a. What factors are helping you to select attributes?
   b. If you were an anthropologist or archeologist researching the use of buttons by a group of people, what questions could you answer based on the information you are recording?
   c. Can the buttons be sorted according to another set of criteria?
   d. What information is revealed by the statistical breakdown on your recording sheet?
   e. What does this activity have to do with archeological study methods?

4. When the buttons have been sorted, give each type a name and compute the percentage of the total collection. For example, if you have twenty buttons divided into four groups of five buttons each, then 25% are part of "x" type, 25% part of "y" type, and so forth. The recorder should complete the recording sheet, giving the name of each type, the attributes that define it, and its statistical relationship to the entire collection.

5. After sorting the buttons and completing the top half of the recording sheet, begin the measurement part of this activity. For each type that you have given a name, measure and describe the individual buttons within that type and record the information on the recording sheet.

6. Prepare to present your finding to the class.



Button, Button—Recording Sheet

Type	Attributes	Number of Buttons	Percentage of Total	Comments
[Example] color	blue color	5	25%	several shades of blue buttons

Type	Diameter	Material	Comments
[Example] blue button #1	3 mm	plastic	dark blue color; 2 holes

TERMINOLOGY—

The Naming of Parts

Rationale: By studying artifact terminology, students learn one of the techniques that archeologists use in studying past technologies.

Objective: To understand how objects can be described and how the application of terminology assists in discussion and analysis.

Age Level: Grades 4 through 7.

Special Materials: (1) Copies of Example sheets and Worksheets for each student (or each group)

Time Required: 15 to 20 minutes for background discussion or reading; 30 to 40 minutes for completion of exercise and follow-up discussion.

Procedures: Students should read (or have read to them) the background section. The exercise may be done individually or in small groups of 2 to 4 students. Upon completion of the exercise, discuss with the students the discussion questions at the bottom of the worksheet.

Background

When we use the word *parts,* we usually think of one of the parts of a larger system. For example, a wheel is part of a bicycle. But—to really study the bicycle in terms of how it was made and how it was used, we have to have a *terminology* (a set of special or technical terms) for discussing the parts, or **attributes,** of the wheel: the hub and its parts, the rim, the spokes, and the places at which these parts fit together. A terminology for all of the parts of the wheel cannot be developed without an understanding of how the wheel works.

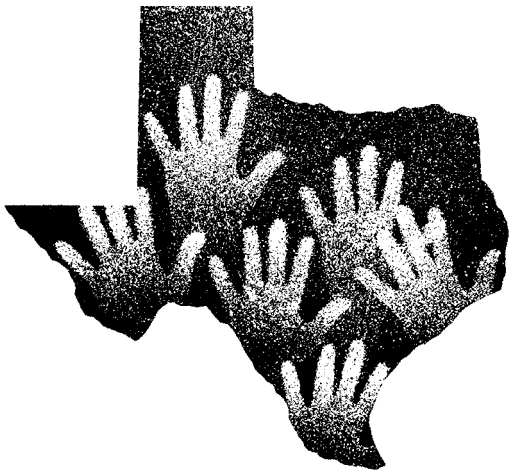
Identifying, naming, describing, and measuring the parts of an artifact assists the archeologist in studying, describing, and categorizing differences in style and technology. For example, an archeologist can place projectile points in categories even if the styles of the points do not yet have names. The categories would be based on the established terminology for describing the different parts of the points.

Why is terminology so important? Consider this: You may be the archeologist who discovers the first spear point made by a Paleoindian culture that is older than Clovis. Since you are familiar with the terminology of projectile point attributes, you can describe the artifact, give exact measurements, and tell that it is different from all other projectile points—and that it *is* a projectile point and not some other kind of stone tool. If you can't name and describe the parts, you could only show people photographs or drawings and say, "Look, it's a spear point but it's different."

Terminology also is essential to preparing tables and charts, which are really useful in the study of artifacts. For example, you may recover the base parts of 5 arrowpoints that have stems. These can be entered into a table under the stemmed specimens category as "miscellaneous" or "unidentified" *stemmed* specimens. You will also be able to enter a measurement for the stems. This kind of information is much more useful than describing the 5 fragments (along with all other fragments) as *unidentified* projectile points.

Terminology is also efficient. Imagine if we had no names for body parts and you had to describe your hand every time you wanted to refer to it. You could call it "the multi-digital, flattend end section of my arm."

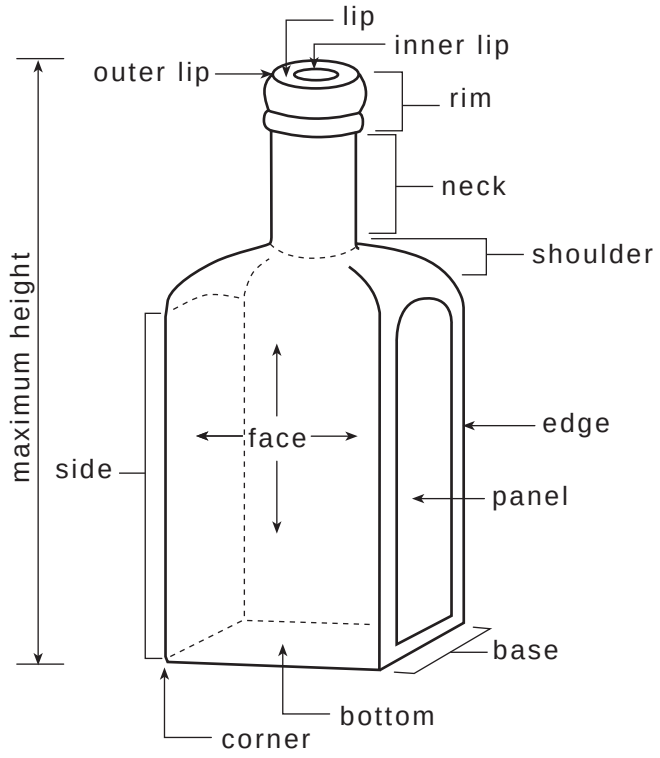
Now that you've gotten the picture, try your hand at naming the parts!



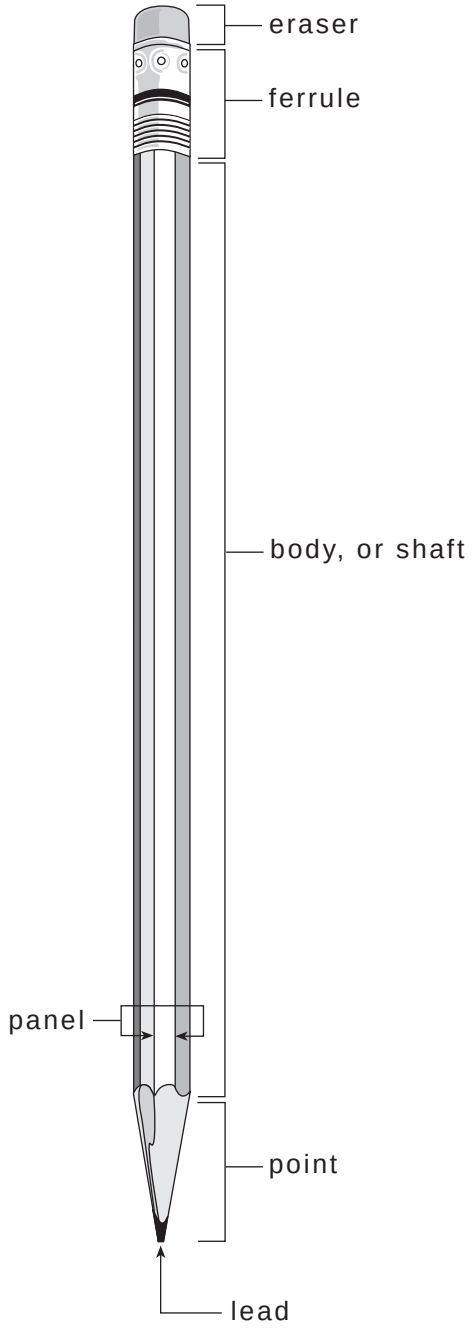
Rock art handprints symbolize teamwork in the logo of the Texas Archeological Stewardship Network.

Worksheet: Examples of Terminology

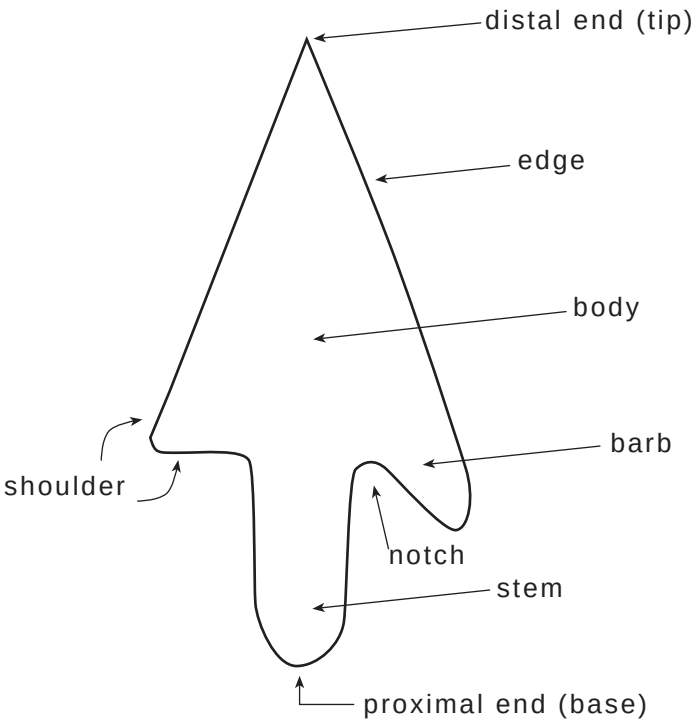
BOTTLE TERMINOLOGY



PENCIL TERMINOLOGY

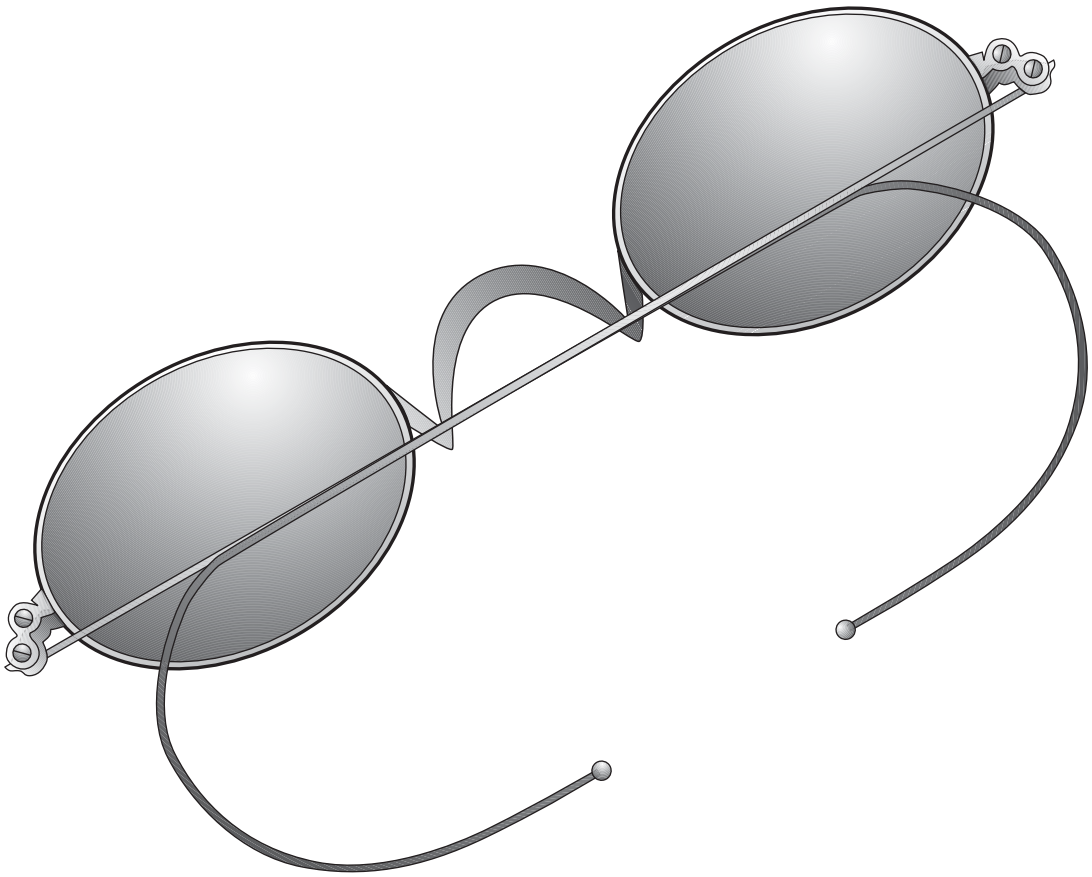


ARROWPOINT TERMINOLOGY



Worksheet: Name These Parts

Instructions: Study the examples of artifact terminology on the Examples sheet. Then, study the artifact below and label the basic parts of the artifact, using arrows to connect the names to the parts. Use the dictionary or other reference books if necessary.



Discussion: Are there parts of your artifact for which you cannot find a "name"? In class discussion, ask other students if they know the word for the unidentified part. If not, can anyone think of a good descriptive word or term?

As a culture's technology becomes more complex, do you think terminology becomes more complicated? How many people, do you suppose, can name every part of an automobile? A jet plane? A space station? A computer?

Do you think the need for terminology might explain, in part, the acquisition of new words in languages? If we have to use too many words to describe a part of something, wouldn't it be simpler to come up with a new word (or a new meaning for an older word) for that part? Mouse, for example.

Strategies for Teaching Archeology

By Patricia M. Wheat. Reprinted from *Insight*, Newsletter of the Education Services, Texas State Historical Association, Vol. 4, p. 6 (Fall 1990).

Introduction

There are many ways to use archeology as a teaching tool, but perhaps the most interesting to students are those that are activity oriented. The two activities that follow will be better understood by students if some preparation is undertaken regarding the concepts and terminology of archeology.

Activity I—Material Culture

Rationale: By assessing a list of personal possessions, students will be able to learn something about the person who used those objects.

Objective: To introduce the idea **of material culture** and its importance in telling archeologists about past peoples. Material culture includes any object or structure that is made or altered by humans.

Age Level: Grades 4 through 7.

Special Materials: One 3 x 5 card for each student; pencils

Time Required: 5 to 10 minutes for background discussion; 30 to 40 minutes to complete the activity.

Instructions: To introduce the idea of *material culture* and its importance in telling archeologists about the ways people lived:

1. Have each student list on a 3 x 5 index card ten personal possessions that would survive a fire (do not have names on the cards). Collect these cards.

2. Redistribute the cards at random, making sure that no student receives his or her own card.

3. Have the students write a description of the person whose list they received. Mention such things as age of the person, his or her likes and dislikes, and activities in which he or she participates.

4. Students should then use their description as the basis for a classroom discussion of the kinds of things you can learn about a person from material remains—and the kinds of things you cannot learn.

Activity II—Archeological Techniques

Rationale: By collecting and assessing modern trash, students can make deductions about the activities that take place in the area from which the artifacts came.

Objective: To introduce the concept of archeological techniques (especially site description and artifact analysis) as a means of learning about how a site was used.

Age Level: Grades 4 through 7.

Special Materials: plastic or paper bags for artifacts

Time Required: 15 to 20 minutes for background discussion and instructions; 20 to 30 minutes for survey and collection. One additional classroom period for analysis and discussion.

Instructions: Get students involved in the techniques of archeology through the study of modern trash:

1. Divide the students into teams of 6 to 8 students. Each team is secretly assigned a team number and an area of the school or grounds. They should survey that area and come back with (a) a collection of artifacts picked up on top of the ground, and (b) a written description of the physical characteristics of the area surveyed (but *not* the name, such as football field). The team's "secret" number should be on each collection and written description.

2. Teams exchange artifact lots and site descriptions. Each group should analyze the materials and description it received and try to interpret them, listing (a) kinds of behavior or activities that took place in the area reported, (b) functional name or description of the area, and (c) how long ago the described behavior or activities happened. The analysis should be headed "Analysis of Site No. [the number is the secret team no.]."

3. Return the analysis to the original team. Ask a team member to report, in a class discussion, on the accuracy of the analysis. Discuss what can be learned and what cannot be learned about the area from the "evidence" that each team collected.

Tool Kits and Cultural Differences

Rationale
By assessing one group of artifacts and looking for parallels in other cultures students learn one of the basic concepts of archeology: that artifacts can tell us how prehistoric peoples satisfied their basic needs.

Objective
To understand how artifacts serve as clues to past cultures; to understand the difference between what is universally human and what is cultural.

Age Level
Grades 4 through 7.

Special Materials
Copies of worksheet.

Time Required
15 to 20 minutes for reading or discussing background; 30 to 40 minutes for activity and follow-up discussion.

Procedures
Students should read (or the teacher should read and discuss with them) the background section below. The exercise may be done individually or in small groups of 2 to 4 students. Upon completion of the exercise, discuss with the students the questions at the bottom of the activity handout sheet. Note: this activity can stand alone or it can be employed as follow-up to reeinforce the concepts presented in the other cultural universals activity ("The ABCs of Culture) provided in this unit.

Background
This activity is based on information presented in Part I and/or assumes general knowledge of the Late Prehistoric period and pioneer settlers in Texas. Additional background information is provided below.

Basic needs that must be satisfied are universally human. How needs are satisfied (including the methods and the tools that are used) are cultural. As cultures evolved different ways to meet their needs, those cultures became distinctly different. The rich cultural diversity in the world today is a result of all the different ways that people have found to meet their basic needs.

Archeology, as a branch of anthropology, makes the basic assumption that past peoples had the same basic needs as people living today. To find out how people met those needs, archeologists study sites and artifacts.

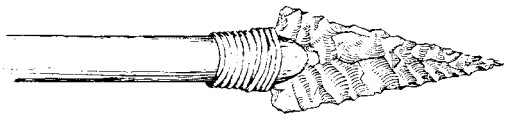
Single artifacts usually do not reveal much about cultural differences. For example, an arrowpoint may mean that people used the point for hunting with a bow and arrow. So, how does the archeologist know that different cultural groups made arrowpoints and met their basic needs in different ways?

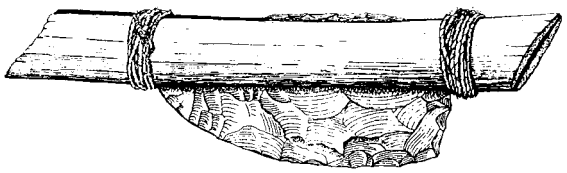
One way to begin to see cultural differences reflected in artifacts is to look at "tool kits." Think of the kit as a group of tools that are used together for a specific function. A tool kit for hunting and butchering might include these stone tools:

arrowpoints
scrapers
knives
choppers
hammer stones

Archeologists also look at the "style" or technology of artifacts as clues to cultural differences. For example, many styles of arrowpoints were made by different cultural groups. The archeological study of technological and cultural differences is very complex. It involves not only artifacts, but other material remains and the sites themselves.

Nevertheless, we can see some of the differences between major cultural groups through time by looking at the tool kits they used to meet basic needs. Based on what you already know about past and present cultures, you can infer a lot about the differences in their "tool kits."





Worksheet: Tool Kits and Culture

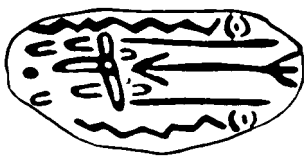
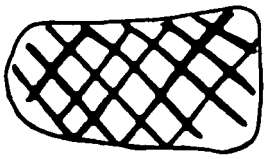
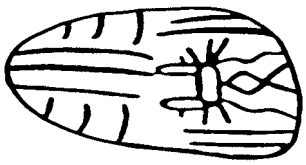
Instructions: Look carefully at the list of "prehistoric" tool kits in the first column. For the pioneer settlers, list tools that meet the same basic needs. For some tools the difference may be in the material (as a hoe blade of bone or metal). For this exercise you may list things that would not survive in an archeological site.

Late Prehistoric Villagers	Pioneer Settlers
Food Acquisition	
Hunting and butchering:	
bow and arrow	
stone chopper	
hammer stone	
stone knife	
stone scraper	
Cultivation of crops:	
hoe made of bone	
digging stick	
ceramic water jar	
Gathering plant foods:	
basket	
bag made of woven fibers from wild plants	
stone knife	
Water Storage in House	
pottery water jar	
Making Clothing	
bone or stone awl	
stone graver (or punch)	
Construction of shelter	
stone ax	
hammer stone	

Discussion

Discuss some of the things that are implied by the tool kits, as well as some of the things that are left out. For example, what materials did people use for making clothing? Most prehistoric families probably built their own shelters, but they could get help from other members of their group. Pioneers who settled in communities also got help from their neighbors. How many people do you know in Texas today who build their own houses? Do you know about people anywhere who do so? Is it easier to find similar items for the Late Prehistoric villagers and the pioneers than it would be for the prehistoric villagers and modern city dwellers? Why? What affect did the introduction of machinery and modern power sources have on the tools we use to meet our basic needs?

Painted Pebbles

Rationale: Participants create replicas of painted pebbles as a means of understanding how and why prehistoric peoples may have created paintings or etchings on rock.

Objective: To understand the concepts of design and function; to deduce from the activity how symbolism might be used in a culture with no written language; to deduce how symbolism may relate to art in general; to deduce how symbolism may relate to superstition, magic, ceremonies, games, or group identity.

Age Level: Grades 4 through 7.

Special Materials

- Sharpies (fine-point permanent markers), as sub stitute for black and red paints
- Pebbles ("skipping" shape)
- Copies of worksheets
- Optional: Students may mix and use dry paints and use frayed twigs as paint brushes.

Time Required: Minimum: Allow about 15 minutes for discussion of background information. Allow 30 to 40 minutes for completion of activity (omit the team section of the activity).

Alternative. Make copies of the background section for each student. Devote one classroom period to reading and discussion of rock art. Devote one classroom period to replication of painted pebbles, team analysis activity, and discussion.

Preparation and Procedures:

1. Instruct each student to bring to class one or two pebbles, of the type used for "skipping" across water. Smooth, fairly thin and flat, oval or elongated pebbles, about 3 inches long, are best for use in this exercise. If you live in an area where pebbles are rare, students may cut their "pebbles" from cardboard or heavy paper.

2. Discuss the background section or have the students read the background section and then discuss it. A discussion of the probable functions of rock art is essential to this activity.

3. Provide materials and a copy of the sample painted pebbles to each student.

4. Instruct the students to decide which function(s) they want their pebbles to serve. Each student should paint one or two pebbles, depending on the time allocated. The student should paint the pebble so that it will "serve" the pre-selected function; student then completes the "Student" section of the worksheet.

5. (For extended activity) Instruct students not to discuss their work. Assign students unique numbers for each pebble. Instruct them to write the number, very small, in pencil on their pebble(s). Divide students into an even number of teams of "archeologists," with 2 to 4 students in each team. Have the teams exchange pebbles. Each team then analyzes the pebbles, completing the "Team" section of the worksheet. The same teams then exchange the Student sections of their worksheets. Each team will then evaluate how close they were to determining the chosen function of the pebbles they analyzed.

6. Discuss why students chose certain functions and how close the teams came to correct "analysis" of the pebbles. Discuss the meaning of the word **symbol.** How do clubs, businesses, or sports teams use designs as symbols of group identify? Would it be easier to analyze the function of a tool than it is to analyze the function of a symbolic object? Why? Is there any difference between personal magic and superstition? Does the student's description of use help explain what the pebble symbolizes? Ask the teams to discuss their choices of their favorite descriptions of how the pebbles might be used.

7. Display the pebbles in the classroom or school library during Archeology Awareness Month. Make cards for each pebble in the display, explaining the decorative techniques and functions of the pebbles. Describe the ways in which the pebbles might be used.

(Activity continued on next page)

Background for Painted Pebbles

Figures and designs painted on, or etched into, stone by prehistoric peoples have been found on the walls of caves and rockshelters around the world. These works are called **rock art.** The painted figures are called **pictographs.** The etched figures are called **petroglyphs.**

One of the most famous rock art sites in the world is a cave near Lascaux, France. The figures were painted about 15,000 B.C. Archeologists believe that the animal figures have a **symbolic** meaning that may be related to hunting magic.

Rock art in Australia may be even older (about 20,000 B.C.). The traditional culture of the **Aborigines** of Australia survived late into historic times. The study of their rock art is very important in helping us understand all prehistoric rock art.

Rock art is found all across Texas, but the best-known sites are located in the canyons of the Rio Grande. There, large shelter caves contain some of the finest examples of rock art in the United States. These sites date from as early as the Archaic period (beginning about 6000 B.C.) to as late as the historic period (after A.D. 1500). They are our best clues to the ceremonies and myths of prehistoric Texans.

One of the most famous Archaic sites in Texas is Fate Bell Shelter, in Val Verde County. **Shaman** figures are shown in many of the paintings there. A shaman was a religious leader, or medicine man.

Prehistoric Texans also painted or etched designs on pebbles. These pebbles are a kind of "portable rock art." As people did for pictographs, the pebble painters used natural pigments, such as soot and red **ocher,** to make paint.

Designs

Painted pebbles usually have one of the following types of designs:

(a) **Anthropomorphic**: a human figure having animal features; for example, the body of a man with wings and the head of an eagle.

(b) **Figural:** any human or animal figure (or part of a figure) that is not anthropomorphic; for example, a human handprint, a mountain lion, a snake.

(b) **Geometric:** straight or curved lines, rectangles, circles, triangles.

(c) **Natural:** things from nature other than people or animals, such as plants; for example, a flower, a tree, a lightning bolt.

Functions

Think about these ways that painted pebbles might function:

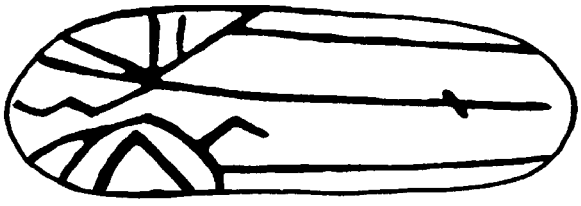
(a) **Ceremonial.** Example: during a dance or other ritual, participants place the pebbles in a special place (in a cave, on an altar, near the fire). This ceremony is one of hunting magic. Images of powerful medicine men, great hunters, and/or the animals to be hunted are painted on the pebbles.

(b) **Personal magic.** Example: I am a member of the Bear clan. I carry this pebble painted with the face of a Bear in my medicine bag, which contains "magic" or special objects known only to me.

(c) **Gaming.** Examples: A different design is painted on each face of the pebble; the pebble is flipped, like a coin, to decide who goes first in a game. Or, pebbles are painted with any kind of design; they are tossed from a distance into a shallow hole; the winner, who gets the most stones into the small hole, identifies his or her stones by their designs.

(d) **Decorative**. Example: I paint designs on these pebbles and then display them on a windowsill or in a frame on the wall. Their function is to be pretty.

From studying traditional cultures around the world, we can infer the possible functions of painted pebbles. The specific ways they were used are unknown. Archeology, with help from other sciences, may be better able to interpret this portable rock art in the future.



(Activity continued on next page)

Painted Pebbles: Student Worksheet

Instructions:

Review the drawings of prehistoric painted pebbles at the bottom of this page. These are examples of real prehistoric artifacts.

From the lists below, select a design type and a function for each pebble you paint. If you have been instructed to number your pebble(s), place the number for each in the blank beside each design and function type you have chosen. If you are painting only one pebble and not using numbers, place a check mark in the right blanks. Choose only 1 design type and 1 function for each pebble.

In the space for "Description of Use," write one or two sentences describing a specific use for your pebble(s). If your pebbles are numbered, write the number before each description.

Example: Choose "Figural" design and "Personal magic" function. Paint the pebble with the face of a bear, symbolizing your school's sports team. (You may plan either a "modern" or "prehistoric" use for your pebble.) Describe the use: "I plan to carry the pebble in my pocket as a good luck charm at all football games. This magic may help the Bears win."

Basic types of designs:

(a) **Anthropomorphic** _____

(b) **Figural** _____

(b) **Geometric** _____

(c) **Natural** _____

Basic functions:

(a) **Ceremonial** _____

(b) **Personal magic** _____

(c) **Gaming** _____

(d) **Decorative** _____

Description of Use:

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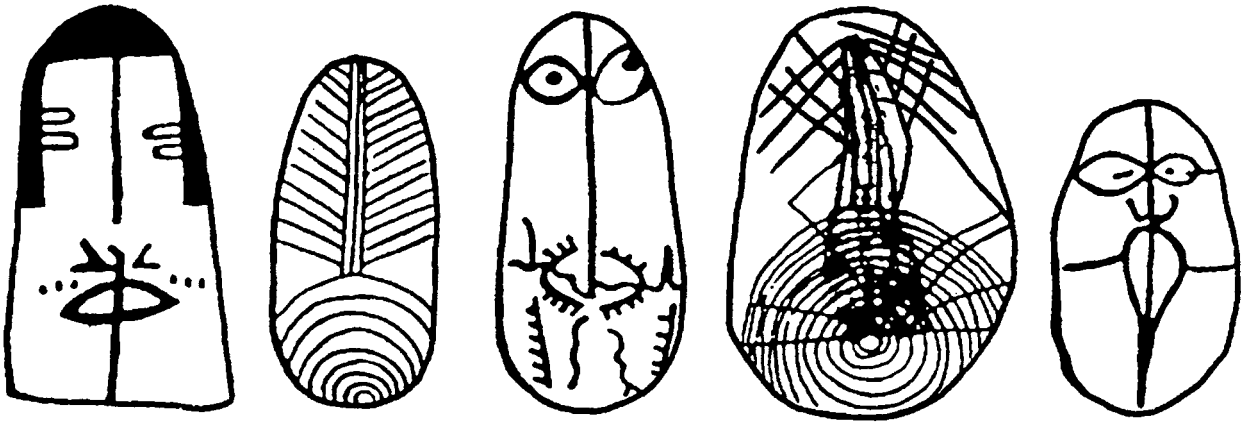


Painted Pebbles: Team Analysis Worksheet

Instructions: List the assigned number of each pebble the team analyzes. Discuss each "artifact" and then write in the design type and function that your team believes the painter used for each. After you have done this, get the student's worksheet for each pebble. In the next column across, write the student's designated design type and function for the same numbered pebble. Count and report in the following space the number of pebbles your team analyzed "correctly": ________. Team name or number: ____________________________.

Team Analysis		Student's Statement	
No.	**Analysis**	**No.**	**Analysis**
___	Design: ______________________	___	Design: ______________________
	Function: ______________________		Function: ______________________
___	Design: ______________________	___	Design: ______________________
	Function: ______________________		Function: ______________________
___	Design: ______________________	___	Design: ______________________
	Function: ______________________		Function: ______________________
___	Design: ______________________	___	Design: ______________________
	Function: ______________________		Function: ______________________
___	Design: ______________________	___	Design: ______________________
	Function: ______________________		Function: ______________________
___	Design: ______________________	___	Design: ______________________
	Function: ______________________		Function: ______________________
___	Design: ______________________	___	Design: ______________________
	Function: ______________________		Function: ______________________
___	Design: ______________________	___	Design: ______________________
	Function: ______________________		Function: ______________________

Use of Pebbles:

(The team should agree on the "description of use" that they like best; base the choice on imaginative content, agreement of use with design and function, and clear description. Give the number of the pebble chosen, and copy the description of the use below (or on back of this sheet). Be prepared to discuss in class the reasons for your choice.)

No. **Copy of description of use:**

_____

Archeo-ART

Adapted from a lesson plan prepared by KC Smith and Sine Murray, Museum of Florida History, Division of Historical Resources, Florida Department of State.

Rationale

This game allows students to become familiar with basic or advanced archeological terms. In a classroom setting, the activity can serve as a diagnostic instrument or as a review before evaluation.

Objectives

- to associate words and ideas with mental pictures
- to understand archeological terms
- to develop visual communication skills

Age Level

Grades 4 through 12

Special Materials

chalkboard and chalk
clock with second hand
3 by 5 cards
video or article on archeology (optional)

Time Required

Allow 15 minutes to prepare for this activity and 40 to 50 minutes to play the game.

Preparation

From the list below, select archeological terms appropriate for the age group. Write the individual terms on 3 by 5 cards.

Determine how to divide the group into two teams.

Obtain a video or article on archeology (optional).

Procedure

1. Have the class read an article or view a video on archeology.

2. Present the archeological terms to the class for study.

3. Divide the class into two teams. Determine which team will go first.

4. Team 1 selects an individual to draw a picture representing the first term. After a few seconds of study, the student begins drawing. Only 60 seconds are allowed for drawing the picture.

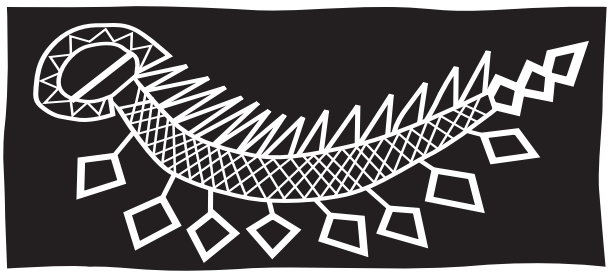
5. While the "artist" is drawing, the teammates guess which term the picture represents. If the team guesses correctly within the 60-second time frame, they receive one point. If Team 1 does not guess the correct answer, then Team 2 is allowed one guess. If Team 2 guesses correctly, they will receive two points. Play alternates between the two teams for an amount of time designated by the teacher.

6. Discuss the meanings of the terms as they relate to archeology.

Suggested Terms

If you use the optional video or article about archeology, you may wish to select artifact and site or feature terms from your source. If not, present the following terms to the class for study.

Tools	Artifacts	Site or Features
trowel	shell	hearth
shovel	beads	burial
camera	glass fragment	midden
compass	pot sherd	pueblo
scales	projectile point	shipwreck
brush	horse shoe	floor
dental pick	bottle	well
map	bricks	privy
screens	knife	rock carving
notebook	statue	rock fence
measuring tape	nails	animal pen
toothbrush	jewelry	kiln
microscope	awl	fort



CULTURAL EXCHANGE—

Cornucopia of Discovery

Adapted from a lesson plan prepared by KC Smith and Lisa Sharik, Museum of Florida History, Division of Historical Resources, Florida Department of State.

Rationale: Participants work with two lists of ingredients, creating familiar foods and discovering that many popular items eaten today are a combination of New World and Old World products.

Objectives: To distinguish between foods native to the New World and those introduced from the Old World.

Age Level: Grades 3 through 7.

Special Materials

Copies of handout
World map (optional)

Time Required: Allow 15 minutes to prepare for this activity and 30 to 40 minutes to complete it.

Background: The ingredients used to prepare foods that modern Americans eat come from a wide variety of sources, both indigenous (native) and introduced from abroad. Many of the crops grown in gardens today were not present in the Americas before European explorers and settlers began to introduce plants and foods from Europe, Africa, and the Orient. Oranges and other citrus fruits that are now grown all over the Americas were brought here by the explorers. It is also true that many crops grown for centuries in the Americas were introduced to Europeans as a result of transatlantic traffic to the east. The potato is a good example. This food native to the Americas became an integral part of many European diets—especially the Irish. Gradually, European newcomers and native residents began to share traditional food resources and recipes, sometimes adapting food dishes to suit accustomed tastes.

Procedure

1. Begin with a general discussion about food, such as the students' food preferences, how preferences vary globally and through time, and the role of food in culture. Ask students to list a few foods that were enjoyed by the Indians in Texas before the arrival of Europeans. Ask students to suggest foods that Spanish missionaries and settlers brought to Texas. Discuss how the foods eaten hundreds of years ago by these groups are different from those we eat today.

2. Distribute a copy of the worksheet to each student. Read the directions aloud and answer any questions about completing the activity. As participants are working, circulate and offer assistance.

3. When the worksheets are finished, ask several participants to read their ingredients for foods in List C. Explain that List A includes items that were native to the New World, and that items in List B originated in the Old World. Use the world map to point out the areas being discussed. Explain how Europeans brought new plant and animal species from their homelands to preserve and replicate the foods to which they were accustomed.

4. Lead participants in a discussion about the dietary and economic impacts of this global migration of plants and animals, referring to the worksheet as a source of information. People today could not enjoy many of their favorite foods without the ability to combine ingredients from both lists. Italians, for example, could not put tomato sauce on their pasta until tomatoes were brought from the New World. Ask students to suggest some other dishes that could be made by combining items from the lists. Discuss how some imports, such as citrus and peaches, have become major commercial crops in the South, and how at least one New World plant not listed on the worksheet—tobacco—has become the focus of modern social debate.

Resources for the Teacher

Crosby, Alfred W., Jr. 1972. *The Columbian Exchange: Biological and Cultural Consequences of 1492.* Contributions in American Studies No. 2. Greenwood Press, Westport, Conn.

Simons, Helen. 1992. "The Tex-Mex Menu." In *Hispanic Texas: A Historical Guide,* edited by Helen Simons and Cathryn A. Hoyt. University of Texas Press, Austin.

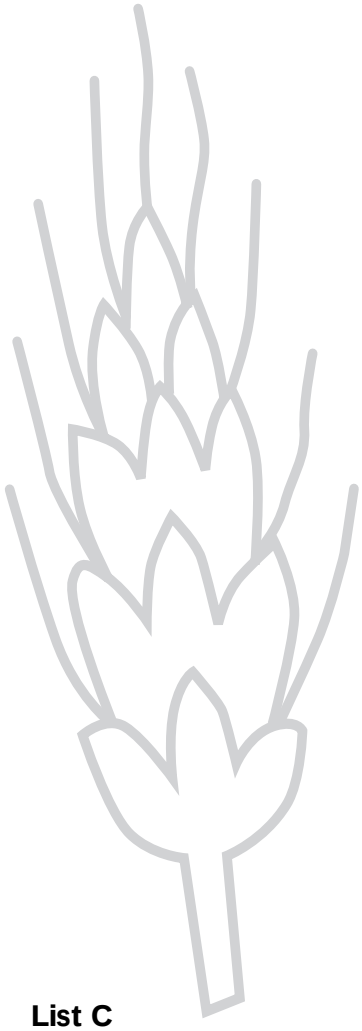
Sokolov, Raymond. 1989. "Before the Conquest." *Natural History,* August, pp. 76–79.

———. 1989. "Insects, Worms, and Other Tidbits." *Natural History,* September, pp. 84–87.

———. 1989. "The Well-Traveled Tomato." *Natural History,* June, pp. 84–88.

Cornucopia of Discovery—Handout

Lists A and B include a variety of plants and animals. List C presents some prepared foods that are popular among Americans today. Select an ingredient from List A and List B that is used in preparing each of the food dishes named in List C, and write the ingredients on the lines provided by the side of each food dish.



List A—New World Foods	List B—Old World Foods
corn	wheat
white potato	oats
sweet potato	rice
manioc	yam
tomato	cucumber
pumpkin	beet
squash	onion
avocado	olive
chili pepper	carrot
pole bean	radish
lima bean	lettuce
cocoa	banana
vanilla	citrus
pineapple	plum
persimmon	grape
guava	peach
mulberry	almond
sunflower seed	sugar cane
peanut	goat
turkey	pig
bison (American buffalo)	sheep
alligator	cow
bear	chicken

List C

pizza	_____	_____
burrito	_____	_____
pumpkin pie	_____	_____
potato salad	_____	_____
spaghetti and sauce	_____	_____
hamburger and fries	_____	_____
chocolate chip cookies	_____	_____

Can you think of any other favorite foods that require ingredients from both List A and List B? Name them below:

_____ _____ _____

_____ _____ _____

HISTORICAL CLUES ON MAPS—

Texas Indian Place-Names

Rationale: A study of Texas place-names shows that (1) contributions to American English from Native American languages are more common than most of us realize, and that (2) maps can be used as research documents.

Objective: To understand contributions to our language, especially in terms of place-names, made by Native American groups; to understand that place-names on maps can be archeological clues to where certain ethnic groups once lived.

Age Level: Grades 4 through 7.

Special Materials: (1) Copies of handout (on reverse of this page) for each student or for teams; (2) access to *Handbook of Texas* (optional).

Time Required: one classroom session for background discussion or reading; one or two classroom sessions for activity (depending on accessibility of research sources).

Procedures: Students should study and discuss the examples of Indian place-names provided on the reverse of this page. The activity/exercise should be done in small teams of 2 to 4 students. Upon completion of the exercise, conduct a classroom discussion of the final map resulting from the activity.

Background: Tracing names derived from Indian words, or associated with Indian groups or places, is not always easy. The Spanish explorers and missionaries, who were the first Europeans to enter into Texas, often adopted Texas Indian names for rivers and other natural features. However, the Spaniards translated the place-names into Spanish, and many of the Indian origins for place-names have been lost. The selection of place-names (on the reverse of this page) includes names derived from Indian words as well as names that are associated with Indians or their activities. Some of the place-names are "second hand"; that is, they got their names from other places that were originally derived from Indian words. For example, Navasota, a town in Grimes County, got its name from the Navasota River—probably called Nabatsoto by Indians and recorded as "Navasoto" by the Spaniards in 1727.

Such early place-names can be clues to where different groups of Native American, or other ethnic groups, once lived. Be aware that some recent place-names are not good clues to the historic locations of Texas Indians. For, example, a developer might name a subdivision "Comanche Creek Estates" even though no Comanches and no Comanche Creek are known ever to have existed in the area.

Activity: Divide the class into small teams and provide each team with a Texas highway map or county maps from the *Texas Almanac*. Assign each team a region (an outlined area on the map) and ask them to (1) highlight on their section of the map (or on their county maps) any place-names from our list, and (2) find and highlight all other place-names in their region that they believe are related to Texas Indians. The *Handbook of Texas* may be used as a reference for the origins of names. A time limit should be set for the activity that will allow time for follow-up discussion.

Next, ask the teams to participate in highlighting on one map of Texas all of the place-names located by the teams. Discuss any names that may not be Native American and that could not be found in a reference source; if everyone is uncertain about a name, discard it.

Finally, discuss the completed map in class; for example: Can regional differences be seen in the place-names? Where there is a river with an Indian name, is a county or town with the same name likely to be found. How might early maps be used by archeologists to locate archeological sites? If you were an archeologist looking for sites, what kinds of place-names would you choose as clues? Would it be more practical to survey both banks of a major river, or the banks of a local creek or spring—and why? Why are some of the places more likely to contain archeological sites than others? How do you think historical maps might help in finding possible site locations before an archeologists goes into the field to record sites? What are some other ethnic groups whose settlements might be traced through place-names? Do you think there any areas of Texas that have no Hispanic place names? Are there any places in your county that have ethnically derived names?

Extension: If your students are familiar with Spanish, Hispanic place-names also can be used for this activity.

Texas Indians and Texas Place-Names

Anadarko Creek—for the Anadarko Indians, a Caddoan group. Also known as Barnhardt Creek, this stream is in Rusk Co.

Anahuac—either from an Indian word meaning "high plain water," or from an Indian chief, Anahwa, or from an ancient Mexican Indian place name. The town is in Chambers Co.

Anaquitas Creek—the stream, in Duval Co. and Jim Wells Co., derives its name from the Anaqua Indians, a group first described by Cabeza de Vaca.

Angelina River—named for a Caddoan Indian woman whom the Spaniards called Angelina, "little angel." The county and the national forest derive their names from the river.

Apache Mountains—these mountains, in Culberson Co., are located in country that was the last stronghold of the Apache Indians in Texas.

Aransas Bay—from Indians who were called Aransuas by the Spaniards. Other place names in the area, including the name of the county, come from the name of the bay.

Ayish Bayou—the stream, in San Augustine Co., derives its name from the Ais, or Ayish, Indians, a Caddoan group.

Balaxy Creek—named for Biloxi, Mississippi, which in turn is named for the Biloxi Indians; the creek is in Angelina Co. A historic settlement, Biloxi, in Newton Co., was first settled by Indian emigrants, perhaps Biloxi Indians, from east of the Mississippi.

Bedias—for the Bidai Indians, a Caddoan group whose name meant "brushwood." The town is located in Grimes County. Bedias Creek, in Madison and other counties, also gets its name from this group.

Bois d'Arc Bayou—from the bois d'arc tree, so named by the French because the Indians favored the wood of this tree for manufacturing their bows. The bayou is in Grayson Co. and Fannin Co.

Bowles Creek—probably for Chief Bowles, a leader of the Cherokee Indians; two creeks bear this name, one in Cherokee Co. and one in Rusk Co.

Caddo Lake—named for the Caddo Indians, the lake is in Marion and Harrison counties. Other place names derived from these Indians are Caddo Creek (four creeks, mostly in East Texas) Caddo Mills (Hunt Co.), and Caddo Peak (Johnson Co.).

Cherokee County—from the Cherokee Indians who, under Chief Bowles, lived in East Texas in the early 19th century. Other places to which they gave their name include Cherokee Bayou (Rusk Co.) and Cherokee Creek (one in Briscoe Co., one in San Saba Co.).

Comanche County—for one of the most famous tribes of Plains Indians, the Comanches. Other place names include Comanche Creek (8 different streams), Comanche Peak (one in El Paso Co. and one in Hood Co.), and Comanche Springs (Pecos Co.)

Delaware Bend—from the Delaware Indians, who were closely associated with the Cherokees in East Texas. The town is in Cooke Co. Other place names probably derived from this group are the Delaware Mountains and Delaware Spring, in Culberson Co.

Nacogdoches County—from the Nacogdoche Indians, a Caddoan Group. The main town in the county also is named Nacogdoches.

Navasota River—probably called Nabatsoto by Indians. It was recorded as "Navasoto" by the Spaniards in 1727 and has had that name ever since. Navasota, a town in Grimes Co., gets its name from the river.

Seminole—from the Seminole Indians, who were associated with the Cherokees in East Texas and who later settled at Eagle Pass in the 1870s. The town of Seminole, Seminole Canyon, and Seminole Draw are in Gaines Co. Another Seminole Canyon is in Terrell Co.

Shawnee Creek—from the Shawnee Indians; a group of these Indians settled on the upper Sabine River in the 1820s. There are at least 3 creeks with this name, in Angelina, Red River, and Rusk Cos.

Tehuacana—from the Tawakoni Indians, who lived in this area until the 1840s. The town, the Tehuacana Hills, and Tehuacana Creek are in Limestone Co.

Waco—the city, in McLennan Co., is named for the Waco Indians, a Wichita group that entered Texas in the early 18th century and occupied this region in the 19th century.

Wichita County—from the Wichita Indians, who once lived in this area. Other place names derived from this group are Wichita Falls and the Wichita River.

Compiled by Archeology Division staff. Source: *Handbook of Texas*. (Texas State Historical Association, Austin. 1952)

ARTIFACT ASSOCIATION—

Who Camped in the Lower Pecos?

Rationale: By assessing a group of artifacts associated with hearths (a common archeological feature), students learn one of the basic concepts of archeological analysis: association.

Objective: To test understanding of material gained from *The Indian Years*; to understand how associated artifacts can help in interpreting archeological sites; to understand the importance of preserving archeological sites intact.

Age Level: Grades 4 through 7.

Special Materials: Copies of handout (on reverse of this page).

Time Required: 15 to 20 minutes for background discussion or reading; 20 to 30 minutes to complete worksheet and for follow-up discussion.

Procedures: Students should read (or have read to them) and discuss the background section. The worksheet may be completed individually or in teams of 2 students. Upon completion of the exercise, discuss with the students the questions at the bottom of the activity handout sheet.

Background

In this purely imaginary scenario, an archeological team has surveyed an isolated part of the Lower Pecos region. In three areas they found exposed burned-rock features (hearths). They recorded the hearths and noted that they might be evidence of significant campsites. Their inference was based on knowledge of other sites in the region and their observations at these sites.

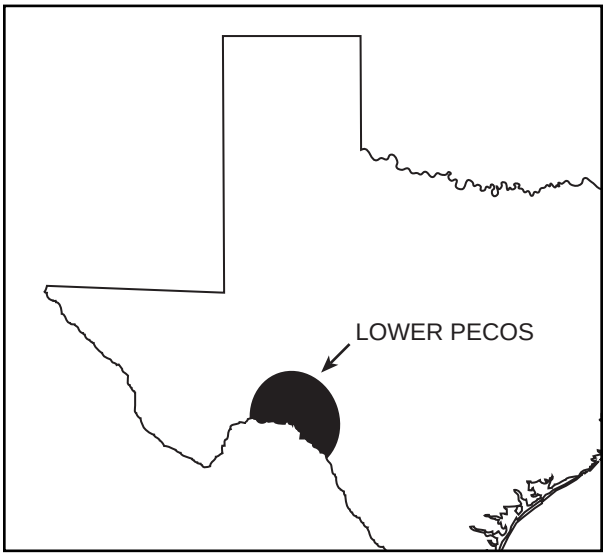
One of the sites was located at the base of an overhanging bluff. It was named the Red Bluff Site. The "overhang" provided some protection for the site. On the rock wall of the bluff there was one small area of rock art. The archeologists were very interested in this site because the figures in the rock art were different from those at other known sites in this region.

One of the sites was located on a terrace of the Rio Grande, above the flood level. The site was named for the landowner, Hector Madrid. Based on the extent of exposed flint flakes and two small ceramic fragments, the archeologists believed the hearth might be part of a significant campsite.

The third site was located at a small spring that had not been recorded on the topographic map. This site was named the Lost Spring site. Because water is scarce in this region, springs are places where sites are nearly always found. A piece of copper wire was found partially exposed at the site. It was possible that this wire had recently been left on the surface of the site. A few pieces of modern trash (rusted tin cans and a rifle cartridge) were observed elsewhere near the spring.

The archeologists tested the sites to determine if excavation was warranted. (To test a site archeologists scrape the surface with shovels or excavate one or more units to find out if cultural remains are present below the surface of the ground.) The tests showed that one of the sites was badly disturbed. Pothunters had dug into the hearth and mixed the buried strata and surface artifacts. There was no evidence of deeper, intact remains. One of the sites contained evidence of Spanish exploration in this remote area. The other site was related to historic Plains Indians (probably Comanches).

The archeologists intend to return and fully investigate the two undisturbed sites. Both of these sites are rare types in this region.



Worksheet: Identify the Lower Pecos Sites

Instructions: Below the three sites are identified only as A, B, and C. Assume that the artifacts or other remains were all found below the surface, in Level 1 of each site. Study the artifacts (some of the artifact names will be new to you, but not the basic artifact types) to determine which period each site is from; write the period (or identify the site as disturbed) in the blank under each site; then answer the questions below.

Site A	**Site B**	**Site C**
Perdiz arrowpoint	Val Verde dart point	metal arrowpoint
ceramic fragment	Langtry dart point	glass "seed" bead
flint flakes	etched pebble	copper bracelet
hammer stone	hammer stone	metal knife blade
mano	flint flakes	elk tooth pendant
stone knife	stone scraper	abalone shell pendant
bone awl	charcoal fragments	shell hair ornament
charcoal fragments	Perdiz arrowpoint	"D" ring from a saddle
glass bead	glass bottle base	rifle cartridge
_____	_____	_____

Which site do you think is the Red Bluff site? _____

Which site do you think is the Hector Madrid site? _____

Which site do you think is the Lost Spring site? _____

What are the best clues in Site A? _____

What are the best clues in Site B? _____

What are the best clues in Site C? _____

Further discussion:

Explain your choice of the artifacts that you listed as "best" clues for each site.

Which site is disturbed? Which periods of prehistory are represented in this site? What kind of information about prehistory did we lose because the site had been dug by collectors?

Historic Native American sites are rare. They are so recent that they have not had time to be buried by sediment, and many of the sites have disappeared. Since the artifacts were nearly always on the ground surface, what do you think happened to them?

Val Verde dart points have been found in sites that date to about 2500 to 1000 B.C. If the only one ever found came from this site, would scientists know when the Val Verde point was used? Why can a site not be dated if the contents are mixed by uncontrolled digging?

Which site would you like to investigate further? Why?

ARTIFACT INTERPRETATION—

Coins as Cultural Clues

Adapted from a lesson plan provided by Leonora Isakk, Hollis, NH, that appeared in *Archaeology and Public Education* 5 (2), December 1994 (Society for American Archaeology, Public Education Committee, Washington, D.C.).

Rationale: This simple yet intriguing exercise demonstrates the amount of information that the study of a single artifact can yield about a society.

Objectives/Skills: Students will:

- assess the characteristics of a society based on analysis of a single coin
- make inferences, analyze details and features, examine assumptions, brainstorm, work cooperatively, formulate questions

Age Level: Grades 4 through 7.

Special Materials: one or two pennies for each group

Time Required: Allow 40 minutes to prepare for this activity and 40 minutes to complete it.

Background

Among the hundreds, and often thousands, of artifacts that an archeologist finds at a site, sometimes a single object will provide a surprising amount of detail about a society. A coin is an example because it has the potential to reveal information about leaders, values, technological accomplishments, language, political structure, and a numerical system in operation, as well as the date of manufacture of the coin.

Studying a United States penny, students can gather certain information about the American society, such as:

1. Americans have access to minerals, presumably through mining or trade;
2. American men wear or have worn facial hair;
3. Americans believe in a deity;
4. they construct open-air monumental architecture;
5. they have knowledge of the Latin language;
6. they have a numerical system;
7. they are organized into a system of affiliated states;
8. this object is not wearable.

The temptation may exist to make inferences from the coin based on actual or modern knowledge—for example, that Americans know how to mine or that they construct buildings of stone. Both facts are true, but does the information on a penny really prove them?

Archeologists often are faced with similar dilemmas, when a recovered object suggests that something may have occurred or existed, but further proof is needed. Armed with such circumstantial evidence, archeologists develop new questions and hypotheses to test as they proceed with their research. While they hope that certain proof will emerge, sometimes they must state their conclusions by noting that something "may have" or "probably" occurred.

Procedure

1. Divide students into groups of three or four. Distribute one or two pennies per group, and tell the groups to select one member to be responsible for recording the group's findings on paper.

2. Ask students to imagine that they are examining a single artifact, found alone, from an unknown society. Their task is to determine as many features as possible about the people who made the object.

3. When the work group time has elapsed, ask teams to present their conclusions and to describe the processes that they used to reach their decisions. Lead students in a discussion about the details that can be derived from artifacts and the problem of making assumptions based on modern knowledge and behavior. Discuss as well the cumulative process that allows archeologists to reach larger conclusions about a population of people.

Extensions

- Present this activity using old or foreign coins.
- Ask older students to develop a schema for artifact analysis and test it on other artifacts from contemporary society.

WORKSHEET: Example of Possible Schema for Analyzing Artifacts

Adapted from a lesson plan contributed by Lonna Sanderson, fourth-grade teacher, Graham Elementary School, Austin.

Characteristic of Society	Inference made	Reason for inference
Food		
Shelter		
Clothing		
Religion or beliefs		
Traditions		
Values		
Government		
Family structure		
Economics		
Technology		
Division of labor		
Transportation		
Communication		
Education		
Art, Music, Drama, and/or Literature		
Entertainment and/or celebrations		
Other:		
Other:		
Other:		
Other:		

THE READING-WRITING CONNECTION—

Everybody Needs . . .

by Nanette Fisher

Introduction

"Why are we doing archeology in English class?" asked a student. I replied, "My intent is to help you see the connection between real life and school experiences."

In this age of multiculturalism and emphasis on writing across the curriculum, I use archeology, a special interest of mine, as an integrated approach of study.

Here's a potential lesson that may help you share your special interest as I do.

Rationale

The reading of a fictional account can be related to real life experiences.

Objectives

- to develop writing skills
- to make the reading-writing connection
- to enable students to understand the interrelatedness of skills that are learned in different disciplines (e.g., archeology and English)

Age Level

Grades 4 through 12.

Special Materials

- copy(ies) of *Everybody Needs a Rock,* by Byrd Baylor
- display of archeological items (optional)

Time Required

This introductory lesson is suitable for any grade level and may take two or three days to complete. Time required will depend on whether the book is read aloud in class or assigned as an out-of-class reading assignment, and whether the writing is an in-class or out-of class assignment. At least two class periods will be needed for discussions before and after the writing assignment.

Preparation

Prior to the reading–writing connection, set up a display of rocks, replicas or photographs of prehistoric artifacts, and tools used by archeologists (optional).

Background

Information on the basic concepts of prehistory and archeology (as provided in the background section of this teachers unit) will assist the teacher in the preliminary discussion.

Reading–Writing Connection

1. Read *Everybody Needs a Rock,* by Byrd Baylor. The main character is a Native American who values the uniqueness of each rock.
2. Discuss the story and how rocks were used in prehistoric times, such as their use in heating food and in the making of weapons and tools.
3. Invite students to find their own unique rocks (*not* artifacts!).
4. Returning to the classroom, students can be assigned to write a story about their chosen rock. The teacher writes, too.
5. Students should share their stories.
6. Debrief by asking the students what they found most interesting about the rock they selected.
7. Display students' writings. Further revision may be undertaken at a later time.

CULTURAL UNIVERSALS—

The ABC's of Culture

by Lonna Sanderson, fourth-grade teacher, Graham Elementary School, Austin.

Rationale
By assessing a coin or paper money, students learn how facts about a culture can be deduced from the study of artifacts.

Objective
To understand the concept of cultural universals.

Age Level
Grades 4 through 7.

Special Materials
(1) copy of *The Way to Start a Day,* by Byrd Baylor; (2) copies of handout (on reverse of this page)

Time Required
Sufficient time (to be determined by teacher) for preliminary reading of *The Way To Start a Day.* Activity time: 15 to 20 minutes for background discussion or reading and 30 to 40 minutes for each part of the activity and follow-up discussion.

Background
Begin your classroom study of cultural universals by reading to your students *The Way To Start a Day,* by Byrd Baylor (Macmillan Childrens Book Group, New York, 1978), which is about the different ways in which people greet the day.

Activity, Part I:
Cultural universals are elements of culture that meet the needs of people and are found in most cultures. Ask your students to list the cultures mentioned in the story and the different ways of greeting the day. Write this list on chart paper, on the chalkboard, or on a transparency. The list may be organized into two categories: (1) ways in which ancient cultures greeted the day, and (2) ways in which modern cultures greet the day. Discuss the concept of "sun worship." Lead students to the conclusion that the sun has been important to all cultures throughout time and throughout the world.

Ask the students to think of other ways in which cultures are similar. List these on a chart and title the chart "Cultural Universals." Examples of cultural universals students may mention are these:

Food, shelter, clothing (basic needs)
Religion or beliefs
Traditions
Values
Government or social structure
Family structure
Economics (trade, barter, monetary system)
Technology
Division of labor
Transportation
Communication
Education
Esthetics (art, music, drama, literature)
Entertainment or celebrations

Discussion:
1. Look at the list of ways to start a day that we made after we read *The Way To Start a Day.* Did every culture mentioned in the story greet the day in the same way? (No.)
2. Do you think the cultural universals we have listed are the same in all cultures? (No.) Although all cultures have these cultural elements or needs, the ways in which these needs are met differ.

Activity, Part II:
Analysis of paper money or a coin can be used to infer cultural universals from an artifact. Divide students into groups and give each group a piece of money from a foreign country. Ask the students to assume that they know nothing about the "artifacts" given to them. Ask the students to examine the artifacts and determine as much as they can about the culture that produced these artifacts. The students should use the worksheet (on reverse of this page) to list the cultural universals that can be determined from the artifacts.

Worksheet: The  's of Culture

Cultural Universal	Inference made	Reason for inference
Food		
Shelter		
Clothing		
Religion or beliefs		
Traditions		
Values		
Government		
Family structure		
Economics		
Technology		
Division of labor		
Transportation		
Communication		
Education		
Esthetics Art		
Music		
Drama		
Literature		
Entertainment and/or celebrations		

SITE SURVEY AND ASSESSMENT—

The Buffalo Soldiers Site

Rationale

By assessing a group of artifacts students learn one of the techniques (preliminary assessment) that archeologists use in recording sites.

Objective

To understand how artifacts can help in making a preliminary judgment about site significance; to understand the value of the "preliminary assessment" technique in evaluating data.

Age Level

Grades 4 through 7.

Special Materials

Copies of handout (on reverse of this page)

Time Required

15 to 20 minutes for background discussion or reading; 30 to 40 minutes for activity and follow-up discussion.

Procedures

Students should read (or have read to them) the background section. The exercise may be done individually or in small teams of 2 to 4 students. After completing the exercise, discuss with the students the questions at the end of the handout sheet.

Background

In the late nineteenth century the U.S. military was trying to displace Apaches from far western Texas. Companies from the Ninth and Tenth Cavalries were assigned to this duty. The African Americans who served in these cavalry regiments were known as Buffalo soldiers.

The Tenth Cavalry was assigned to constantly patrol the Rio Grande, mountain passes, and key waterholes from Fort Davis to El Paso.

The Buffalo soldiers were very important to the opening of western Texas for settlement. They served at most of the frontier forts and are famous for their bravery, loyalty, and skill as soldiers. They also guarded stage stops and mail routes, making communication and transportation possible. However, as able as they were, they did not always win their battles.

On October 28, 1880, companies B and K of the Tenth Cavalry engaged in a battle with the Apaches. The Buffalo soldiers built a **redoubt** (a defensive barrier made by forming a semi-circle of stacked stones) on top of a ridge overlooking the Rio Grande in Hudspeth County. This stone wall that they built to help defend their position did not succeed. The skirmish resulted in the deaths of seven soldiers and the loss of several of their animals and equipment.

The remains of this site were recorded in 1976 as archeological site 41HZ227.

Imagine that you are an archeologist who wants to record and study sites related to the Buffalo soldiers. You are surveying sites in Hudspeth County and want to assess each site to identify the ones that related to the Buffalo soldiers.

During your survey, you find two sites that contain tumbled-down stone features. A preliminary assessment of artifacts from the ground surface around the walls tells you that one may be a redoubt constructed by the Buffalo soldiers. The other is probably the remains of a stone wall or fence, perhaps at an early ranch. There are only a few artifacts on the ground surface at each site, and some of them could have been used at either site. But you are lucky: a few of the artifacts are definite clues for identifying the Buffalo soldiers site, and you are able to choose the right site for further study.

This buffalo appears at the top of the military emblem of the Tenth Regiment, United States Cavalry.

Worksheet: Identify the Buffalo Soldier Site

Instructions: Only a few artifacts were found on the ground surface at each of our sites. The archeologist made a preliminary assessment of the artifacts. The artifacts were good clues that one of the sites is a military site—and probably a Buffalo soldier site. From a "preliminary assessment" of the list of artifacts for sites A and B, decide which is the Buffalo soldier's redoubt and which is probably a ranch corral. Circle the artifacts on each list that you think are definite clues.

Stone Wall Site A

tin can

horseshoe

enamelled-tin cup fragment

horseshoe nails

pistol cartridge cases

rifle cartridge cases

mess kit

metal button

small brass letter "K"

Stone Wall Site B

tin can

horseshoe

ceramic cup fragment

horseshoe nails

branding iron fragment

rifle cartridge cases

enamelled-tin coffee pot lid

metal hinge

snuff bottle

Which site do you think is the Buffalo soldier site? _____

Further discussion:

What are the diagnostic clues in Site A? _____

What is the diagnostic clue in Site B? _____

Why are artifacts related to horses so common in nineteenth-century sites?

For further study of which of these sites would you choose records at Fort Davis?

If a collector had already picked up the best clues from each site, would your "preliminary assessment" be more difficult? What could you tell about the sites if all of the artifacts had been picked up by collectors?

INTERPRETING HISTORIC SITES—

A Panhandle Dugout

Rationale

By sorting artifacts in categories, students learn one of the techniques that archeologists use in determining not just what artifacts are, but what they tell about a site.

Objective

To understand how artifacts can be used to identify and date a site, to use analytical skills, and to learn how categorizing information can help us understand what the data mean.

Age Level

Grades 4 through 7.

Time Required

15 to 20 minutes for background discussion or reading; 30 to 40 minutes for completion of exercise and follow-up discussion.

Procedures

Students should read (or have read to them) the background section. The exercise may be done individually or in small groups of 4 to 5 students. Upon completion of the exercise, discuss with the students what the artifacts say about who lived at the site and when. Why did they categorize the artifacts as they did? What do those groups of artifacts tell us about the site and its inhabitants?

Background

A dugout is a simple structure that usually has only one room. The back of the structure is dug into a hill or a slope of land. The front of the structure is built of rock or logs—or even of sticks and mud, like a south Texas *jacal.* The building material depends on what is available in the area. Dugouts were usually built in areas where logs were not available for building cabins.

Because historic dugouts are so much alike, they are good examples of how to interpret a historic site. Dugouts in the Texas Panhandle, for example, were used by at least four different groups at different times.

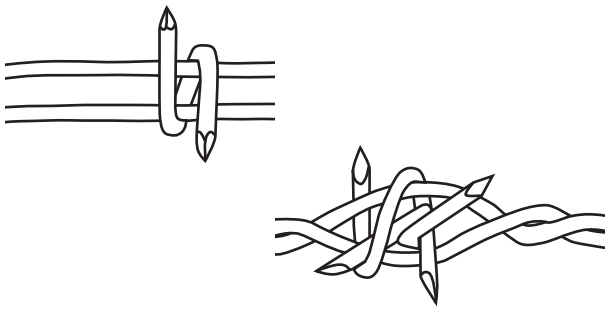
(1) ***Comancheros*** were Indian traders. They began their trade on the southern plains after 1786. The Spanish governor of New Mexico gave permission for trade after he signed a treaty with the Comanches. Comanchero trade was at its peak in the1860s and early 1870s, when guns and ammunition were added to their stock of trade goods. And the Comancheros built dugouts at some of their favorite trading spots.

(2) ***Pastores*** were sheepherders from New Mexico. They came to the Panhandle in the mid-1870s, when the Plains Indians were finally being driven out. The sheepherders built settlements, but the herders spent many months herding their flocks on long treks from pasture to pasture. And the sheepherders built dugouts at some of their camps.

(3) ***Cowboys*** came to the Panhandle in the mid-1880s when the cattlemen arrived. The ranchers claimed the plains as their range and forced out the *pastores.* These early ranches were huge, and the cowboys camped on the range. They built dugouts at some of their line camps.

(4) ***Farmers*** followed the railroads into the Panhandle in the 1880s. These early settlers often built dugouts as their first homes.

So, when an archeologist finds a dugout, artifacts are the best clues to the people who once occupied the site.



Antique barb wire, like these and the one at the top of the page, is a common artifact at rural sites in Texas. The one at the top of the page is called "spur rowel" and resembles the rowel on the spurs worn by cowboys. This barb wire was adapted from *Antique Barb Wire Collecting,* by Bryan Wolf (privately published, Crystal Beach, Texas, 1969).

Worksheet: Artifacts from a Panhandle Dugout

Instructions: On the left is a list of artifacts that archeologists recovered from a dugout in the Texas Panhandle. Place each of the artifacts in one of the groups on the right. After sorting the artifacts, think about the discussion questions so you can join in a class discussion. Note: the bucket handles can go in two function categories.

Artifacts Listed by Material Type

Metal

buttons
bucket handles
frying pan handle
cartridge cases
rifle barrel
barb wire
toy gun barrel
hoe blade
plow blade

Ceramics

doll head, porcelain
plate fragments
churn lid

Glass

canning jar fragments
pepper sauce bottle
perfume bottle

Artifacts Listed by Function

Personal Items (clothing, toys, etc.)

_____
_____
_____
_____

Food Preparation and Serving

_____
_____
_____
_____

Hunting

_____
_____
_____
_____

Agriculture

_____
_____
_____
_____

Discussion:

Which list (the one by material type or the one by function) tells you most about the people who lived at the site? Why? Are both lists good clues to when the site was used? Do you think comancheros, pastores, cowboys, or farmers lived here? Which artifacts are the best clues to who lived at the site? Why?

PICTURES AS RECORDS—

Farm and Ranch Life

Adapted from, "Picture This: Using Photographs To Study the Past," by KC Smith (*Archaeology and Public Education* 6 (1), Winter 1995–96. Society for American Archaeology, Washington, D.C.)

Rationale

Students use photographs as a basis for discussion of farm and ranch artifacts and how archeologists use documentary sources.

Objective

To understand that photographs can be used as documentary sources; to understand the kinds of information that photographs can provide. Skills such as observation, deduction, inference, and comparison are employed.

Age Level

Grades 4 through 7.

Special Materials

(1) Copies of photographs (see Preparation, below);
(2) copies of handouts for activity.

Time Required

Allow one class period (about one hour) for discussion and preparation. One additional class period will be required for each activity part (Activity Part II is optional). Additional preparation time may be required for the teacher, depending on how the photographs are collected for Part 2.

Preparation

Activity Part I: The teacher should make copies of the photograph and handout provided with this activity (1 for each student). Read the background section in preparation for class discussion. The teacher may choose also to make copies of this section for the students to read as preparation for discussion.

Activity Part II:

1. Acquire Photographs. Choose one of the following options for acquiring similar photographs for the student teams:

(a) Several days before the activity is to take place, assign each student to collect one copy of a photograph of farm or ranch life from a magazine, newspaper, or other "disposable" sources. Instruct them to use a real life (not a movie or television) scene. They should search the source of their photograph for as much information about the photograph as possible: When and where was the photograph taken? Who are the people in the photograph and what are they doing? Instruct the students to write down (or photocopy) the information about the photograph on a separate piece of paper.

(b) The teacher may elect to assemble the copies of photographs in order to guarantee a useful selection. If this option is chosen, the teacher may decide to collect historic photographs, which will add depth to the exercise.

2. Student Teams. Plan to divide the class into teams of 2 students each. Make 2 copies of the handout worksheet for each team (1 for each student).

Background

Archeologists who study historic sites often use historical records to help them understand the site they are investigating. Both primary sources (unpublished documents such as censuses, deed records, and photographs) and secondary sources (published books and articles) are studied.

Secondary sources can be useful for understanding general historical background. For example, books and articles have been written about German settlement in Texas: when and why they came, how they traveled, when they arrived, and where they settled. However, histories are rarely written about the lives and activities of average people. When such histories are written, they commonly describe family history and special events. They are not likely to include detailed accounts of everyday tools, toys, ornaments, and household goods.

Primary sources such as census and deed records are very important. They can help the researcher (the archeologist or a historian who is assisting with a historic site study) find details about the people who lived at a site: What were their names? How many

(Activity continued on next page)

people in the family? How long did they live at the site? Diaries are really useful for more personal information, but the average farmer, rancher, or cowboy usually does not keep a detailed diary. Diaries that were kept did not always survive, because they were not placed in a library or archive.

Photographs are one kind of primary source that can help a lot in understanding historic sites. Sometimes the researcher is really lucky and finds photographs of the actual structures that once existed at the site and of the family who lived there. Sometimes the researcher can study photographs of similar sites and people from the same time period and area.

Photographs are especially useful when they show the everyday items that people used. For example, kerosene lamps, churns, plows, rifles, wagons, or early automobiles. These things can be clues to the economic status of the people. And they can help the archeologist understand remains that are found at the site.

Useful as photographs are, they must be carefully studied. When and for what purpose they were taken are important questions. The photographer had to decide what to include and what not to include in the scene. And the scene itself may be a special event. Do you think that a wedding scene is a good example of everyday life? Do people sometimes spend more on weddings than they can really afford? Does the automobile in front of the house belong to the farmer or to a visitor? Are we looking at the usual family supper or Sunday dinner for a visiting preacher? Are the cowboys branding the cattle from one ranch, or is this a scene from a cooperative roundup of all the cattle from several ranches?

How might another kind of visual record, representational paintings, be compared to photographs as resources for historical research. Hints: The photographer can decide which part of a scene to picture, but an artist can decide to include, leave out, or alter objects. Portrait painting generally could be afforded only by the upper class. Photography made recorded images available to almost everyone. So photographs gave us records of a larger "slice of life" than paintings did.

How might still another kind of visual record, the drawings in old advertisements and catalogues, be compared to photographs as resources for historical research? How could such sources be used to test the information in photographs? Hint: the 1901 *Sears Catalogue* is a goldmine for the identification and approximate dating of late 19th and early 20th century tools and household goods.

Procedure

1. Discussion. Devote one class period to a discussion of the background information for this activity. Topics that should be emphasized are:

(a) The difference between primary sources and secondary sources.

(b) How photographs might be used by archeologists and historians.

(c) How information from photographs can be tested against other historical sources.

2. Activity, Part 1. Give each student 1copy of the student worksheet and one copy of the photograph that everyone is going to use. Review the instructions and set a time for completion of Activity Part 1. The student's observations about the photograph are to be recorded on the handout.

3. Discussion: When the photograph has been analyzed, lead a discussion of the results. Are there any questions the students could not answer? Ask questions about details in the photograph and what the students thought about them. On what basis did they decide whether the photograph depicted a farm or a ranch scene?

4. Activity, Part 2. Before the activity begins, remind the students to bring their photographs and photograph information sheets. And remind them not to show them to other students. Give each student a copy of the team worksheet. Team mates should exchange the photographs they collected but should not exchange the information sheets that go with the photographs. Each student should work independently to analyze the photograph and complete a worksheet. When this task is completed, the students should then be told to exchange information sheets and use the information sheets as another source to verify their conclusions. Set a time for completion.

5. Discussion: Use the same discussion techniques as for the first part of the activity. If some questions could not be answered, discuss where a researcher might go for more information.

(Activity continued on next page)

Student Worksheet: Pictures as Records

Instructions

Photographs can be good records of people, their activities, and the things they use. However, when we study photographs, we need to ask certain questions:

• Are there clues in the photograph that may tell us why the photographer took this picture?

• Is this a small part of a larger scene, and could important information about the subject of the photograph be missing?

• Is this a photograph of a special event instead of an every day scene? Does that affect how I should interpret the photograph?

Activity for INDIVIDUAL STUDENTS

Examine the assigned photograph and answer as many of these questions as you can.

General Impressions:

1. Based on your first impression, is this a farm scene or a ranch scene?

_____

2. When was the photograph taken (time of day, time of year):

_____

3. What are the people doing:

_____

4. List the things you think you can tell about the people (remember, these are your impressions, not tested facts):

Age or age range: _____

Clothing (check one):

___ everyday clothes

___ work clothes

___ "Sunday best"

___ can't determine

Economic status (check one):

___ below average income

___ average income

___ above average income

___ can't determine

Relationship, if more than one person is shown (check one):

___ nuclear family (man, wife, children)

___ extended family (aunts, uncles, etc.)

___ co-workers

___ group of friends

___ can't determine

Finding the Artifacts:

List the items (and parts of items) in the photograph that you think would survive in an archeological site:

_____

_____

_____

_____

_____

_____

_____

_____

_____

___ See extra page (check here if you need to add a page of your own paper to continue your list; attach the page to this worksheet).

Think about it: Which was easier, giving your general impressions, or finding the artifacts? Why? Could some of the identified artifacts be found at either a farm or a ranch? Could some of the artifacts be found almost anywhere that people of this time lived and worked?

(Activity continued on next page)

Activity for TEAMS

Follow the same instructions as for Part 1 of this Activity. Examine the photograph given to you by your team mate and answer as many of the questions as you can.

General Impressions:

1. Based on your first impression, is this a farm scene or a ranch scene?

_____

2. When was the photograph taken (time of day, time of year):

_____

3. What are the people doing:

_____

4. List the things you think you can tell about the people in the photograph (remember, these are your impressions, not tested facts):

Age or age range: _____

Clothing (check one):

___ everyday clothes

___ work clothes

___ "Sunday best"

___ can't determine

Economic status (check one):

___ below average income

___ average income

___ above average income

___ can't determine

Relationship, if more than one person is shown (check one):

___ nuclear family (man, wife, children)

___ extended family (aunts, uncles, etc.)

___ co-workers

___ group of friends

___ can't determine

Finding the Artifacts:

List the items (and parts of items) in the photograph that you think would survive in an archeological site:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

___ See extra page (check here if you need to add a page of your own paper to continue your list; attach the page to this worksheet).

Test your conclusions against another source: Ask your team mate for more information about the photograph. Use the information to change or complete your answers. List any other important clues you got from your "other source":

_____

_____

_____

_____

_____

_____

Think about it: How did using another source (the information sheets) make it easier to understand the person (or people) in the photograph you studied? How did using the information sheets make it easier to understand or identify the artifacts in the photograph? Could some of the identified artifacts be found at either a farm or a ranch? Could some of the artifacts be found almost anywhere that people of this time lived and worked?

PRESERVATION LAWS AND ETHICS—

Learning the Law

By Cathy MacDonald; reprinted, with slight adaptations, from *Archaeology and Public Education* 5(4), Fall 1995 (Society for American Archaeology, Public Education Committee, Washington, D.C.).

Overview: Teaching **historic preservation** legislation offers an exciting opportunity for interdisciplinary and multidisciplinary classroom experiences that help youths to develop a sense of personal responsibility for stewardship. The approach to this broad topic is presented as a unit plan rather than as the usual lesson idea.

Objectives

(1) *Affective.* Students will become aware:

- ➤ of the meaning of stewardship
- ➤ that the past is a shared heritage and that careful stewardship is needed to protect it
- ➤ that the government values this heritage and protects it through legislation

(2) *Cognitive.* Students will learn:

- ➤ historic preservation legislation applicable in their own area
- ➤ the structure of the legislative process and court system
- ➤ the jurisprudence of historic preservation legislation
- ➤ trial procedures

(3) *Evaluation.* Students will: write a research report; organize a presentation

Skills: Research, oral presentation, memorization, role play, cooperative learning, small group work, hypothesizing, formulating questions.

Age Level: Grades 7–12.

Special Materials: Additional background material (see options in Background section); determine other needs from individual lesson plans.

Background

1. Copies of the Antiquities Code of Texas and summaries of various federal antiquities laws are available from the Office of the State Archeologist, Texas Historical Commission, P.O. Box 12276, Austin, TX 78711-2276. Phone (512) 463-6090; fax 463-2530; e-mail: osa.thc.state.tx.us.

2. If more intensive background material is desired, obtain a copy of the Vol. 5, No. 4, issue of the *Archaeology and Public Education* newsletter. This issue contains several articles that will provide excellent background reading for this activity. Back issues of the newsletter are available for a small shipping and handling fee. Contact: Society for American Archaeology, 900 Second St., NE #12, Washington, D.C. 20002. Phone (202) 789-8200).

3. If you intend to include Lesson 5 (Mock Trial) and need help, the State Bar of Texas provides mock-trial workshops for teachers. Contact the Law-Related Education program: 1-800-204-2222, ext. 2120. For information on mock trial competitions, contact Judy Yarborough, Dallas Bar Association, 2101 Ross Ave., Dallas, TX 75202; phone (214) 220-7409).

4. For additional background resources, see the Resources list at the end of this activity.

UNIT LESSON PLANS

LESSON ONE

Topic: Stewardship and the need for historic preservation legislation

Strategy

1. If available, show *Silent Witness,* a National Park Service videotape that illustrates the impacts of archeological looting and the benefits of legislation protecting heritage sites. (Note: the Office of the State Archeologist has one loan copy, so reserve it well in advance.)

2. Lead a class discussion about the importance of preserving national and local monuments. Questions that you might pose include:

   a. How would our understanding of the past be changed if looters or treasure hunters had destroyed _____? (suggest an example, such as all of the Paleoindian sites in Texas, the Alamo, the shipwreck site of La Salle's *Belle;* the rock art sites at Hueco Tanks).

   b. What motivates treasure hunters and pothunters, and how can they be stopped?

   c. Why is it difficult to stop such activities even with legislation?

LESSON TWO

Topic: The evolution of historic preservation legislation.

Strategy

1. Present information on the development of historic preservation legislation.

2. Emphasize such topics as penalties for breaking the law; how, when, and why legislation was developed; levels of government responsible for various laws; and famous cases.

3. Ask students to speculate about historic bases for laws by examining other movements and events that raised consciousness about heritage preservation at the same time. For example, in Texas the discovery of 1554 shipwrecks by treasure hunters was the catalyst for passage of the Texas Antiquities Code.

LESSON THREE

Topic: Legislative and court structure.

Strategy

Depending on the length of the class, this may take two or three periods.

1. Divide the class into three groups and assign the following topics:

   a. the process of passing a law or bill in the political system.

   b. the sequence of hearings through various levels of courts, including local, state/provincial, and federal.

   c. the process and roles of the various personnel involved in a court trial.

2. Ask groups to research their topics and present their findings to the class. Encourage them to prepare handouts and to take notes during the other groups' presentations.

LESSON FOUR

Topic: Guest Speaker.

Strategy

1. Invite a guest speaker from the legal community experienced with cases involving historic preservation legislation.

2. Help students to prepare for a follow-up question-and-answer session with the speaker.

LESSON FIVE

Topic: Mock trial.

Strategy

This activity may take three or four classes. Students may have to rehearse their roles as witnesses, defendants, lawyers, judges, and jury members.

1. Obtain an actual case that was tried in court in preparation for students conducting a mock trail. See Background and Resources sections of this activity for additional information on mock trials.

2. Lead students in role playing the various parties involved in the case and preparing arguments for the defense and prosecution. If possible, involve a law instructor, a paralegal, or a lawyer.

LESSON SIX

Topic Application of preservation legislation—a reality-based research project

Strategy

In small groups or individually, instruct students to write a research report on an actual court case by examining the following questions and issues. A synopsis of the case should accompany the report.

a. How was the site discovered?

b. How and when did it come under historic preservation legislation?

c. Which pieces of legislation does it come under?

d. Has the site benefited from changes in legislation over the period of its preservation or restoration?

e. Which levels of government are involved?

f. What problems or difficulties were encountered in prosecuting or applying the legislation?

g. What changes should be made to legislation to better protect sites?

Resources

For discussions of numerous recent cases around the United States, see recent issues of *Common Ground* (and its predecessor, *Federal Archeology*); available from:

National Park Service
Archeology and Ethnography Program
PO Box 37127
Washington, D.C. 20013-7127

For an easy-to-use manual for the lay person on how to protect America's archeological artifacts and sites, see *Archeological Resource Protection*, by Sherry Hutt, E.W. Jones, M.E. McAllister (The Preservation Press, 1785 Massachusetts Avenue, N.W., Washington, D.C. 20036). Includes an overview of the vandalism and looting problem in the United States and a step-by-step discussion of how an archeological crime is investigated and prosecuted.

Other useful resources:

Messenger, Phyllis Mauch (ed.). 1990. *The Ethics of Collecting Cultural Property: Whose Culture? Whose Property?* University of New Mexico Press, Albuquerque.

Merryman, John H., and Albert E. Elsen. 1987. *Law, Ethics, and the Visual Arts.* University of Pennsylvania Press, Philadelphia.

Smith, George S., and John E. Ehrenhard (eds.). 1991. *Protecting the Past.* CRC Press, Boca Raton, Fla.

RIGHTS AND RESPONSIBILITIES—

To Dig or Not To Dig

This lesson plan was adapted from *Trash Treasures/Tesoros de basura* by Denise Aedan, Tim Aedan, and Christina Elnora Garza (Earth-Time Curriculum, 335 E. Encore, Hanford, CA 93230; (209) 583-7511) This adaptation appeared in *Archaeology and Public Education* 5(3), Summer 1995 (Society for American Archaeology, Public Education Committee, Washington, D.C.)

Overview: Evaluating the need for a **salvage archeology** project in a hypothetical scenario, students must balance such concerns as employment, cost effectiveness, and the value of local heritage.

Objectives/Skills: Students will

- prepare a role play, and discuss and communicate results
- conduct analysis, application, inferencing, and comparison

Age Level: Grades 7 through 12

Special Materials

- copies of the scenario
- list of townsfolk (roles)

Time Required: Allow one hour to prepare for this activity and two or three 90-minute periods to complete it.

Background: Any construction or development project that receives federal funding must comply with the National Historic Preservation Act, the Archeological Resources Protection Act, and often the National Environmental Protection Act. The common thread among these laws is a desire to preserve the past for public benefit. Most states also have laws to protect resources on their public lands.

Examination or excavation of archeological sites often is done through **contract archeology**—that is, by private firms contracted for a specific project. Excavation is time consuming, and it often is conducted as salvage archeology, done one step ahead of bulldozers. Such projects are important because they preserve information that otherwise would be lost. Once a site has been dug, whether by construction workers, artifact collectors, or scientists, some of the data at the site inevitably is lost. This information is precious to archeologists and should be precious to the public. Each artifact and structure is a piece of the past, and we all have a right to that heritage.

Preparation

1. Copy the scenario and list of townsfolk for each student.
2. Just before the activity, arrange the classroom to look like a city council meeting with a table for council members, a podium, and seats for members of the community.

Procedure

1. Inform students that they will evaluate the need for a salvage archeology project, then discuss the background information. Distribute copies of the scenario and list of townsfolk.
2. Ask students to read the scenario, then discuss the circumstances and the implications. Ask them to choose roles, understanding that each character has a general attitude which can be developed to logical conclusions.
3. To prepare for the town meeting, ask students to write a short summary of their position and how they intend to express themselves during the meeting.
4. Lead students in a role-playing activity in which they make presentations to the city council in support of their positions. Complete the activity with a town vote based on the possibilities raised in the scenario.

Discuss the results of the scenario and the pros and cons of each position. Guide the discussion with such questions as: Why would it be important to save the archeological site? Can development that provides jobs for the present and future be balanced with preserving the past? How would the students' own position in the community affect their opinion in a controversy like the one in Copper Wells?

Assessment

Ask students to use a cause-and-effect diagram to detail their personal positions on the Copper Wells controversy. Emphasize that to persuade others of the rightness of their viewpoint, they must be aware of its possible effects and anticipate the possible effects of other views.

Scenario—

The Copper Wells Controversy

Copper Wells, a small desert community an hour's drive from a large state capital, was founded near a local copper mine in the late 19th century. When the mine shut down 15 years ago, many jobs were lost. To rejuvenate the area, townsfolk plan to build an amusement park and family entertainment site to attract tourists. The project will include building hotels and campgrounds to accommodate visitors, converting the mine into a museum, and refurbishing the old trolley system.

During the ground-breaking ceremony, the mayor unearthed a 700-year-old artifact made by ancestors of the local Native American tribe. The people of Copper Wells are concerned about this turn of events and how it will affect their plans to revitalize the community, because many people will have to move if the project is not completed. A group of local landowners sees the archeological find as a threat, fearing that, if the site is proved to be a ceremonial site, some state or federal agency might try to force the sale of the land for preservation of the site. Other community members have opposed development from the start, protesting the increased traffic and pollution that it will bring to the area. A town meeting has been called to decide what to do.

Some of the fundamental issues in the dilemma include:

- The plan will create 800 jobs, opportunities for small businesses, and attract thousands of tourists.
- The project land is privately owned and the project will be privately funded; thus, excavation and data recovery are not legally required before construction.
- Some Indian activists want to halt the project to "preserve the homes and memories of our ancestors."
- Archeologists want to excavate the site before construction begins to "save its contents for science, the future, and our common heritage."

Controversy has erupted over the concepts of "progress" and "preserving the past." The story has been picked up by national news agencies.

Roles—

Copper Wells Community Members

Harvey Greenback, mayor. He supports the project, seeing his political career tied to its success.

Ella Dent, city council member. She is a lobbyist for the project.

Ignacio Guerra, city council member. His family was swindled out of land when copper was found. He opposed project zoning changes.

T. J. Richtman, city council member. A wealthy sheep rancher, he has land to lease to new businesses.

Vance McGoode, city council member. A project supporter, he has odd environmental protection ideas and lacks tact and cultural sensitivity.

Philbert Norbert, shop owner and business community spokesperson. He hopes the project will help local livelihoods.

Emma Chippendip, leader of the local environmental activist group.

Otto Bagit, local environmental activist and reformed industrialist.

Flower O'Donnell, environmental activist and cafe owner. She's torn between her possible loss of income and a cleaner environment.

Dr. Oswald Grunwald, state university archeologist. He wants to bid on an excavation at the Copper Wells archeological site, should the town decide to fund such a project.

Alicia Alcaraz, Dr. Grunwald's graduate student. She hopes to use the project as her Ph.D. topic.

Dr. Penelope Smith, archeologist from the state capital.

Angelina Nunn, archeologist from the state museum

Edgar Jones, chair of the local Native American tribe.

Bob "Two Birds" Johnson, vice chair of the local tribe.

Ellie Richardson, Native American tribal member. She teaches math and science at a nearby community college.

Fred Rogers, Native American artisan. He supports the project because it will increase his craft sales.

William D. Wlliamson, mining company president. He will sell the mine to townsfolks for their museum.

Sam Jones, unemployed miner. He looks to the project for his next job.

Rachel Jones, Sam's wife. She is employed at Philbert Norbert's shop.

Anna Sanchez, another unemployed miner.

Juan Carasco, construction worker. He sees the project as the beginning of stable employment.

Margaret Payczech, local construction firm owner. She has contracted to build two project hotels.

Lisa Orlando, noted reporter for a major network. She first broke the Copper Wells story.

Raymond L. Ruhlbraker, legal representative for the project investors. He is involved to protect the initial investment of $1,000,000.

Luke Oldtimer, private landowner. He lives in town but owns a large ranch, and he sees all environmental and preservation laws and activities as a threat to private ownership of land.

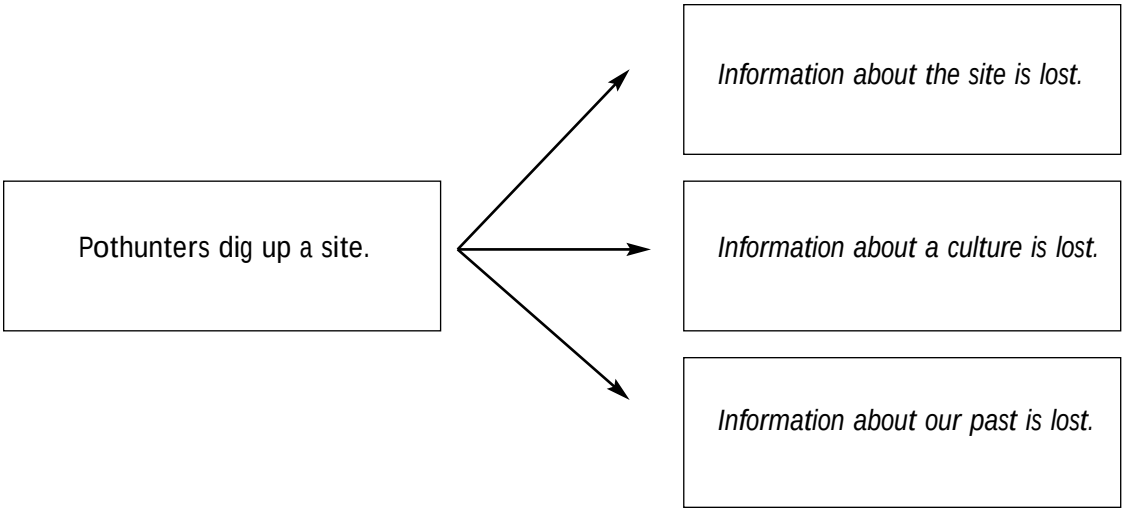
Additional opinionated players as needed to create enough parts.

Writing Strategy: Cause-and-Effect Diagram

Cause and effect organization strategies help students to determine potential outcomes for a certain action. Students move from looking at just the action to evaluating the effects of the action. Cause and effect diagrams help students to list multiple effects of a single cause. Determining all of the effects of a certain action is critical to the scientific method, since it permits anticipation of the effects of research.

Instructions: As an assessment for the lesson plan, teachers are instructed to ask students to use a cause-and-effect diagram to explore their positions in the Copper Wells debate. *Trash Treasures* (from which this activity was adapted) offers the example reproduced below to assist teachers and students with this assignment.

Example of cause-and-effect diagram:



POTHUNTERS—

The Thieves of Time

This activity for "Pothunter or Archeologist" was developed by Judy Meredith, Benold Middle School, Georgetown, Texas.

Rationale: By assessing the results of scientific excavation and those of just digging for artifacts, students learn the difference between archeological investigation and pothunting.

Objective: To understand how disturbing or collecting from archeological sites destroys important information about the past; to understand the importance of applying scientific methods in archeology

Age Level: Grades 4 through 7.

Special Materials: Copies of handout (on reverse of this page); make one for each student, or one copy can be passed from student to student.

Time Required: 15 to 20 minutes for background discussion or reading; 30 to 40 minutes for activity and follow-up discussion.

Procedures:

1. The teacher should first read the "What trained archeologists learned" section of the handout (on reverse of this page) to make sure all of the terms and concepts are familiar before the activity begins.

2. Make copies of the handout for each student (or make one copy to pass around).

3. Begin by having a different student read aloud, in turn, each statement from the "trained archeologist" section. Between readings, discuss and explain the vocabulary and concepts in each statement.

4. When all of the "trained archeologist" statements have been read, direct a general discussion and review of the archeological findings.

5. The teacher should then read aloud the statement of what the pothunter learned. Direct a brief discussion of the difference between archeological investigation and artifact collecting, and the importance of preserving archeological sites.

Background

Archeology is the study of the human past. When archeologists seek to learn about the prehistoric past (the time before written records were available), they rely on the study of material remains. Artifacts, features (areas that show evidence of human activity), and other remains are clues to past behavior. Fragments of artifacts and pieces of burned rock are clues to the past. Pot hunters are more concerned with collecting for collecting's sake and searching for the "perfect" point than they are with finding answers to questions about how past peoples lived. Pothunters have been called "the thieves of time" because they destroy information about the past that cannot be replaced.

A single pothunter,
digging in a site,
can destroy
in a SINGLE DAY
information about
THOUSANDS of years
of prehistory

"Pothunter" or Archeologist— What's the Difference?

The following lists show what archeologists learned from excavating a Late Prehistoric site in the Galveston Bay area and what a pothunter would have learned from excavating the same site.

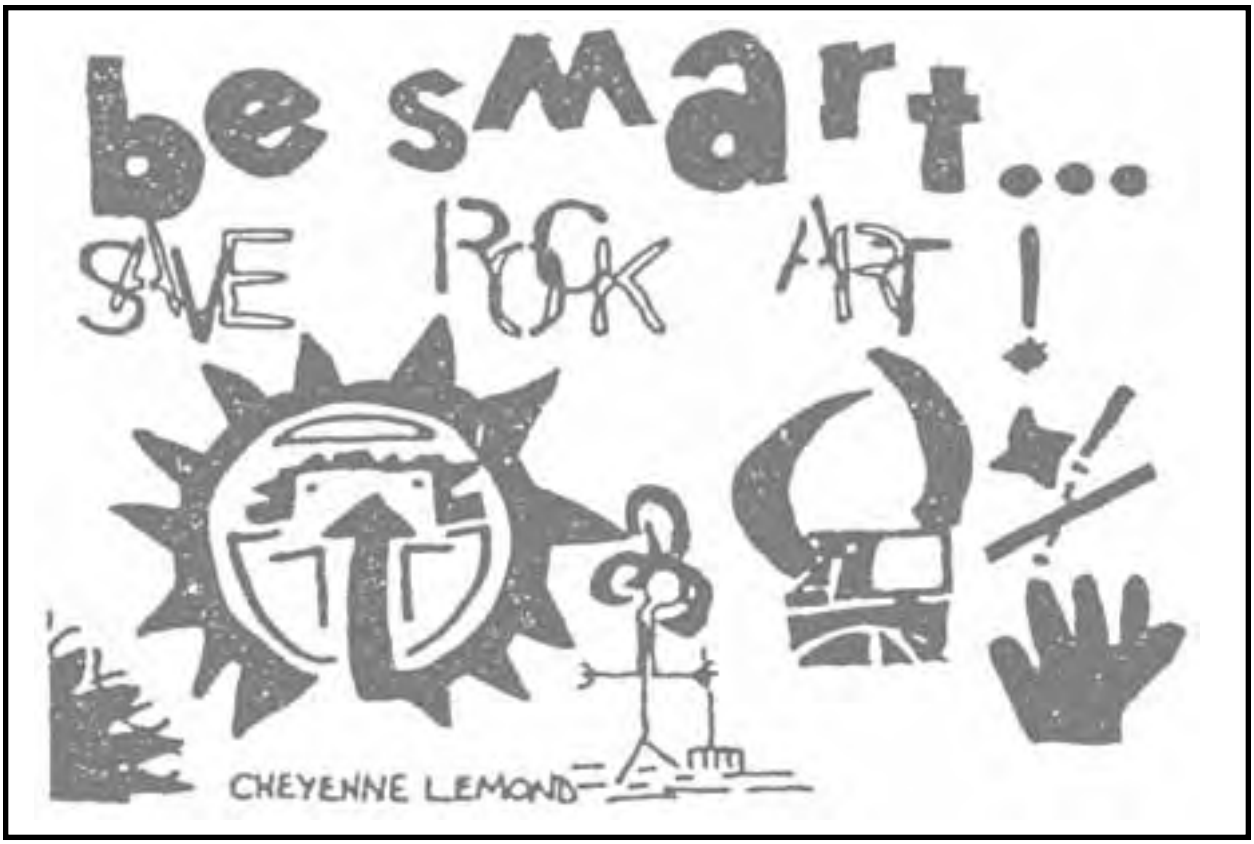
What trained archeologists learned:

1. The people who lived at the site made pottery, hunted with bows and arrows, and buried their dead with objects.
2. The Indians lived in circular, dome-shaped huts made of branches covered with woven mats.
3. The site was first inhabited about 3,500 years ago, primarily during the late summer and early fall. Later, and until about A.D. 500, the Indians returned primarily during the late spring and early summer but made occasional, short visits during the winter.
4. The men made their tools and arrowpoints of stone from local river gravels and from the Edwards Plateau region.
5. The people fished with nets or weirs, snared birds, and gathered mussels, snails, and turtles.
6. The Indians gathered nuts in the fall and cracked them open with stones.
7. Deer were hunted for their meat and hides. Long bones were fashioned into hairpins and sewing tools, rib bones into gaming pieces.
8. Sea shells were made into beads and other ornaments. They also were traded with other groups for stone and other goods.
9. Flutes were made from bird bone that was obtained during the winter bird migrations.
10. Red and yellow ochers (naturally occurring, clayey iron deposits used as pigments) were used to decorate objects and for body painting.
11. The first site occupants came from the Lower Mississippi Valley and brought with them a distinctive pottery style. Pottery styles changed over the years but retained some of the early traits.
12. The Indians buried their dead in a large cemetery near the site.
13. Mortuary practices differed on the basis of social status. Religious leaders were buried with ceremonial objects, craftsmen with their tools, and children with personal items, such as turtle-shell rattles.
14. The highest death rates occurred between infancy and two years of age and among young adult females of child-bearing age.
15. Evidence in the bones indicates that many of the Indians suffered episodes of severe anemia in early childhood.

Concept adapted from Archaeology News, *April 1987. Division of Archaeology, State of Louisiana. Activity for use of this handout developed by Judy Meredith, Georgetown, Texas.*

What a "pothunter" would learn:

1. The people who lived at the site made pottery, hunted with bows and arrows, and buried their dead with objects.



Poster from unit on rock art developed by Eileen Thompson, art teacher, Fort Stockton Middle School, Fort Stockton, Texas.

Additional Activity Ideas for Teachers

If you wish to plan classroom activities to coincide with Texas Archeology Awareness Month (TAAM), an annual October observance, remember to plan ahead. If the activity you choose involves other groups or organizations, contact them as soon as possible. If you plan a research activity, find out if your school or public library has the books you and your students will need. The resources listed in the Resources section of this unit will be useful sources of information for some of these activities.

Displays

Ask your school librarian to display a TAAM poster and books about archeology, North American Indians, Texas Indians, and early Texas settlers during the month of October. Have your students check out a book on one or more of these topics during TAAM. Have students prepare written or oral reports on the books they chose.

Ask your public library to plan a display similar to the one in your school library (see above). Let them know that a TAAM Museum/Libraries Packet can be obtained from the Archeology Division, Texas Historical Commission, P.O. Box 12276, Austin, TX 78711-2276. Plan a library research project for your students, such as the one outlined on the following page.

Create a "rock art" bulletin board in your classroom. Guide students in researching Texas rock art and replicating figures for the bulletin board "rock art panel." Read about and discuss what kinds of pigments the Indians used, how they made brushes, and how they illustrated shamans and hunting magic. Discuss how hand prints might be made.

Field Trips

Contact your local museum and ask what the museum is doing for TAAM. Request activities or exhibits suit-

able for your students during this special week in October.

Contact your county historical commission and ask what the commission plans for TAAM. Request that they plan at least one activity in which students can participate.

Take your class to visit a local museum that has archeological displays.

Contests

Hold a contest, for all classes in your grade level, to design a TAAM poster that is specific to your region. For example the poster might be illustrated with animals and wild plants that Native Americans used, or it could be illustrated with Native Americans involved in specific tasks, such as hunting, making tools, or making pottery. Or, it could feature historic sites, such as early ranches, farms, homesteads, or industries. Or, it could illustrate forces that are likely to destroy archeological sites.

Hold a contest, for all classes in your grade level, to design a bumper sticker or tee shirt for TAAM.

Hold a contest, for all classes in your grade level, to develop the best bulletin board on a TAAM theme. For example: From the map that shows major Native American groups in Texas at the time of European contact, identify the major group(s) that probably lived in your region. Assign the students to learn more about these cultures and produce a bulletin-board mural showing different aspects of their lifeways. The "mural" should include, for example, probable house types, tools, and activities, as well as plants and animals native to the region.

Hold a contest, for all classes in your grade level, for the best individual artwork (drawing, painting, etc.) on a TAAM theme. If clay-working facilities are available, hold a contest for the best replica of Caddoan pottery.

Hold a contest, for all classes in your grade level, for the best poem or essay on a Native American, archeological, or preservation topic.

Research Projects

Have students complete a research project about animals in your region that would have been available to Native American hunting groups and how the animals were used for food and to make clothing, and tools. Begin with extinct animals, such as the mastodon. For much of Texas, the list will include animals that were once common but are now scarce or gone from the region, such as bison (American buffalo), black bear, red wolf, gray timber wolf, and cougar, as well as more familiar species such as deer, rabbit, and squirrels that still live in the region. You should include the horse, because its introduction by the Spanish caused great changes in Native American lifeways. Compile an illustrated "book" with pictures and a brief description of each animal.

Have your class compile information on all the ethnic groups that have lived in your town or county, to celebrate and honor the cultures that are part of your local history. County and local histories in your library should be useful for this project. Also have students conduct oral history interviews of local residents to find out about early settlers, where they came from, and where they lived.

Correlation of Texas Essential Knowledge and Skills

for 3rd Grade Social Studies

and the Activities in *Texas Archeology in the Classroom*

3.2. History. The student understands common characteristics of communities, past, and present. The student is expected to:
(C) compare ways in which various other communities meet their needs.

Related activities:
Cornucopia of Discovery

3.3. History. The student understands the concepts of time and chronology. The student is expected to:
(A) use vocabulary related to chronology, including past, present, and future times.

Related activities:
Cornucopia of Discovery

3.17. Social Studies Skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including electronic technology. The student is expected to:
(B) sequence and categorize information; and
(C) interpret oral, visual, and print materials by identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, and comparing and contrasting.

Related activities:
Cornucopia of Discovery

3.18. Social Studies Skills. The student communicates in written, oral, and visual forms. The student is expected to:
(A) express ideas orally based on knowledge and experiences; and
(C) use standard grammar, spelling, sentence structure, and punctuation.

Related activities:
Cornucopia of Discovery

3.19. Social Studies Skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings. The student is expected to:
(A) use a problem-solving process to identify a problem, gather information, list and consider options, consider the advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution; and
(B) use a decision-making process to identify a situation that requires a decision, gather information, identify options, predict consequences, and take action to implement a decision.

Related activities:
Cornucopia of Discovery

Correlation of Texas
Essential Knowledge and Skills

for 4th Grade Social Studies

and the Activities in *Texas Archeology in the Classroom*

4.1. History. The student understands the origins, similarities, and differences of American Indian groups in Texas and North America before European exploration. The student is expected to:
(A) explain the possible origins of American Indian groups in Texas and North America;
(D) compare the ways of life of American Indian groups in Texas and North America before European exploration.

Related activities:
Cornucopia of Discovery
Teaching Archeological Time Periods

4.2. History. The student understands the causes and effects of European exploration and colonization of Texas and North America. The student is expected to:
(A) summarize the motivations for European exploration and settlement of Texas, including economic opportunity, competition, and the desire for expansion; and
(B) identify the accomplishments and explain the impact of significant explorers, including Cabeza de Vaca; Francisco Coronado; and Rene Robert Cavelier, Sieur de la Salle, on the settlement of Texas.

Related activities:
Texas Indian Place-Names
Cornucopia of Discovery

4.4. History. The student understands the political, economic, and social changes in Texas during the last half of the 19th century. The student is expected to:
(D) examine the effects upon American Indian life resulting from the changes in Texas, including the Red River War, building of U.S. forts and railroads, and loss of buffalo.

Related activities:
The Buffalo Soldier Site

4.6. Geography. The student uses geographic tools to collect, analyze, and interpret data. The student is expect to:
(A) apply geographic tools, including grid systems, legends, symbols, scales, and compass roses, to construct and interpret maps;
(B) translate geographic data, population distribution, and natural resources into a variety of format such as graphs and maps.

Related activities:
Texas Indian Place-Names
Making and Using Archeological Maps

4.9. Geography. The student understands how people adapt to and modify their environment. The student is expected to:
(A) describe ways people have adapted to and modified their environment in Texas, past and present, such as timber clearing, agricultural production, wetlands drainage, energy production, and construction of dams;

(B) identify reasons why people have adapted to and modified their environment in Texas, past and present, such as the use of natural resources to meet basic needs, facilitate transportation, and enhance recreational activities; and
(C) compare the positive and negative consequences of human modification of the environment in Texas, past and present, both governmental and private, such as economic development and the impact on habitats and wildlife as well as air and water quality.

Related activities:
Cornucopia of Discovery

4.10. Economics. The student understands the basic economic activities of early societies in Texas and North America. The student is expected to:
(A) explain the economic activities various American Indian groups in Texas and North America used to meet their needs and wants such as farming, trading, and hunting.

Related activities:
Cornucopia of Discovery

4.19. Culture. The student understands the contributions of people of various racial, ethnic, and religious groups to Texas. The student is expected to:
(C) summarize the contributions of people of various racial, ethnic, and religious groups in the development of Texas such as Lydia Mendoza, Chelo Silva, and Julius Lorenzo Cobb Bledsoe.

Related activities:
The Buffalo Soldier Site
Texas Indian Place-Names

4.21. Social Studies Skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including electronic technology. The student is expected to:
(A) differentiate between, locate, and use valid primary and secondary sources such as computer software; interviews; biographies; oral, print, and visual material; documents; and artifacts to acquire information about the United States and Texas;
(B) analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
(C) organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps:
(D) identify different points of view about an issue, topic, historical event, or current event; and
(E) use appropriate mathematical skills to interpret social studies information such as maps and graphs.

Related activities:
Thieves of Time
Farm and Ranch Life
A Panhandle Dugout
The Buffalo Soldier Site
The ABC's of Culture
Everybody Needs…
Who Camped in the Lower-Pecos?
Texas Indian Place-Names
Cornucopia of Discovery

Archeo-ART
Painted Pebbles
Tool Kits and Cultural Differences
Strategies for Teaching Archeology
Naming the Parts
Button, Button
Making and Using Archeological Maps
The Time of My Life
Teaching Archeological Time Periods
Coins as Cultural Clues

4.22. Social Studies Skills. The student communicates in written, oral, and visual forms. The student is expected to:
(A) use social studies terminology correctly;
(B) incorporate main and supporting ideas in verbal and written communication;
(C) express ideas orally based on research and experiences;
(D) create written and verbal material such as journal entries, reports, graphic organizers, outlines, and bibliographies; and
(E) use standard grammar, spelling, sentence structure, and punctuation.

Related activities:
Thieves of Time
Farm and Ranch Life
A Panhandle Dugout
The Buffalo Soldier Site
The ABC's of Culture
Everybody Needs…
Who Camped in the Lower-Pecos?
Cornucopia of Discovery
Archeo-ART
Painted Pebbles
Tool Kits and Cultural Differences
Strategies for Teaching Archeology
Naming the Parts
Making and Using Archeological Maps
The Time of My Life
Teaching Archeological Time Periods

4.23. Social Studies Skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings. The student is expected to:
(A) use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution; and
(B) use a decision-making process to identify a situation that requires a decision, gather information, identify options, predict consequences, and take action to implement a decision.

Related activities:
Thieves of Time
Farm and Ranch Life

A Panhandle Dugout
The Buffalo Soldier Site
The ABC's of Culture
Everybody Needs…
Who Camped in the Lower-Pecos?
Texas Indian Place-Names
Cornucopia of Discovery
Archeo-ART
Painted Pebbles
Tool Kits and Cultural Differences
Strategies for Teaching Archeology
Naming the Parts
The Time of My Life

Correlation of Texas
Essential Knowledge and Skills

for 7th Grade Social Studies

and the Activities in *Texas Archeology in the Classroom*

7.1 History. The student understands traditional historical points of reference in Texas history.
(A) identify the major eras in Texas history, describe their defining characteristics, and explain why historians divide the past into eras, including Natural Texas and its People; Age of Contact; Spanish Colonial; Mexican National; Revolution and Republic; Early Statehood; Texas in the Civil War and Reconstruction; Cotton, Cattle, and Railroads; Age of Oil; Texas in the Great Depression and World War II; Civil Rights and Conservatism; and Contemporary Texas; and
(B) apply absolute and relative chronology through the sequencing of significant individuals, events, and time periods.

Relevant activities:
Time of My Life
Teaching Archeological Time Periods
Strategies for Teaching Archeology
Cornucopia of Discovery
Texas Indian Place-Names
Farm and Ranch Life

7.6 History. The student understands how individuals, events, and issues shaped the history of Texas from Reconstruction through the beginning of the 20th century.
(A) identify significant individuals, events, and issues from Reconstruction through the beginning of the 20th century, including the factors leading to the expansion of the Texas frontier, the effects of westward expansion on the American Indians, the buffalo soldiers, and Quanah Parker.

Relevant activities:
The Buffalo Soldiers Site
A Panhandle Dugout
Farm and Ranch Life

7.8 Geography. The student uses geographic tools to collect, analyze, and interpret data.
(A) create and interpret thematic maps, graphs, charts, models, and databases representing various aspects of Texas during the 19th, 20th, and 21st centuries; and
(B) analyze and interpret geographic distributions and patterns in Texas during the 19th, 20th, and 21st centuries.

Relevant activity:
Making and Using Maps
Texas Indian Place-Names

7.10 Geography. The student understands the effects of the interaction between humans and the environment in Texas during the 19th, 20th, and 21st centuries.
(A) identify ways in which Texans have adapted to and modified the environment and analyze the positive and negative consequences of the modifications.

Relevant activities:
Tool Kits and Cultural Differences
Who Camped in the Lower Pecos
Cornucopia of Discovery

7.15 Government. The student understands the structure and functions of government created by the Texas Constitution.
(A) describe the structure and functions of government at municipal, county, and state levels.

Relevant activity:
Learning the Law
To Dig or Not to Dig

7.16 Citizenship. The student understands the rights and responsibilities of Texas citizens in a democratic society.
(A) identify rights of Texas citizens; and
(B) explain and analyze civic responsibilities of Texas citizens and the importance of civic participation.

Relevant activities:
Learning the Law

7.21 Social Studies Skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of sources, including electronic technology.
(A) differentiate between, locate, and use valid primary and secondary sources such as computer software, databases, media and news services, biographies, interviews, and artifacts to acquire information about Texas;
(B) analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
(C) organize and interpret information from outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
(H) use appropriate mathematical skills to interpret social studies information such as maps and graphs.

Relevant activities:
The ABC's of Culture
Button, Button
The Naming of Parts
Strategies for Teaching Archeology
Tool Kits and Cultural Differences
Painted Pebbles
Cornucopia of Discovery
Texas Indian Place-Names
Coins as Cultural Clues
Farm and Ranch Life

7.23 Social Studies Skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings.
(A) use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution; and

(B) use a decision-making process to identify a situation that requires a decision, gather information, identify options, predict consequences, and take action to implement a decision.

Relevant activities:
To Dig or Not To Dig
The Thieves of Time
Tool Kits and Cultural Differences
Painted Pebbles
Cornucopia of Discovery

Correlation of Texas Essential Knowledge and Skills

for 8th Grade Social Studies

and the Activities in *Texas Archeology in the Classroom*

8.29. Social Studies Skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including electronic technology. The student is expected to:
(A) differentiate between, locate, and use valid primary and secondary sources such as computer software, databases, media and news services, biographies, interviews, and artifacts to acquire information about the United States;
(B) analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
(C) organize and interpret information from outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
(D) identify points of view from the historical context surrounding an event and the frame of reference which influenced the participants; and
(E) support a point of view on a social studies issue or event.

Related activities:
To Dig or Not to Dig
Archeo-ART

8.30. Social Studies Skills. The student communicates in written, oral, and visual forms. The student is expected to:
(A) use social studies terminology correctly;
(B) use standard grammar, spelling, sentence structure, punctuation, and proper citation of sources;
(C) transfer information from one medium to another, including written to visual and statistical to written or visual, using computer software as appropriate; and
(D) create written, oral, and visual presentations of social studies information.

Related activities:
To Dig or Not to Dig
Archeo-ART

8.31. Social Studies Skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings. The student is expected to:
(A) use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution; and
(B) use a decision-making process to identify a situation that requires a decision, gather information, identify options, predict consequences, and take action to implement a decision.

Related activities:
To Dig or Not to Dig

Correlation of Texas
Essential Knowledge and Skills

for United States History since 1877

and the Activities in *Texas Archeology in the Classroom*

19. Government. The student understands changes over time in the role of government. The student is expected to:
(D) discuss the role of contemporary government legislation in private and public sectors such as the Community Reinvestment Act of 1977, USA PATRIOT Act of 2001, and the American Recovery and Reinvestment Act of 2009.

Related activities:
Learning the Law

29. Social Studies Skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including electronic technology. The student is expected to:
(A) use a variety of both primary and secondary valid sources to acquire information and to analyze and answer historical questions;
(B) analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing and contrasting, finding the main idea, summarizing, making generalizations, making predictions, drawing inferences, and drawing conclusions;
(D) use the process of historical inquiry to research, interpret, and use multiple types of sources of evidence;
(E) evaluate the validity of a source based on language, corroboration with other sources, and information about the author, including points of view, frames of reference, and historical context;
(G) identify and support with historical evidence a point of view on a social studies issue or event; and
(H) use appropriate skills to analyze and interpret social studies information such as maps, graphs, presentations, speeches, lectures, and political cartoons.

Related activities:
To Dig or Not to Dig
Learning the Law

30. Social Studies Skills. The student communicates in written, oral, and visual forms. The student is expected to:
(A) create written, oral, and visual presentations of social studies information;
(B) use correct social studies terminology to explain historical concepts; and
(C) use different forms of media to convey information, including written to visual and statistical to written or visual, using computer software as appropriate.

Related activities:
To Dig or Not to Dig
Learning the Law

32. Social Studies Skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings. The student is expected to:
(A) use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution; and

(B) use a decision-making process to identify a situation that requires a decision, gather information, identify option, predict consequences, and take action to implement a decision.

Related activities:
To Dig or Not to Dig
Learning the Law

PART III

Resources for Teachers

Texas did not invent pothunting, but its practitioners thrive here like nowhere else in America. . . . It is our ignorance that is most humbling, for Texans define themselves by their allegiance to the land of the state—not to property deeds and survey sticks, but to the blood of the soil and all the dreams that lie underfoot. When the land is plundered, we are set adrift, and we become something less than Texan.

—Robert Draper
Texas Monthly, March 1993

Resources

Teacher's Workshops

Crow Canyon Teachers' Workshop. Participants concentrate on archeology, ethnobotany, and Anasazi culture during this week-long session. Teachers learn how to bring the excitement of archeology into the classroom by exploring archeological techniques in the field and by examining methods for teaching archeology and prehistory. Educators at any grade level are invited to participate.
www.crowcanyon.org/archaeology_adventures/archaeology_adventures.asp

Institute of Texan Cultures. The Institute has developed a series of staff-development workshops for K–12 educators and individuals training to become educators. These presentations, based upon on-going research at the Institute, offer educators the opportunity to become familiar with additional instructional methods for engaging children in the learning process. Teachers are provided with the tools to enhance the "detective-like" reasoning abilities of students; to increase awareness of cross-cultural similarities; to dispel stereotypical ideas about cultures; and to aid in the understanding of traditions, lifeways, and values of various cultures. Staff development programs can vary from two to six hours in length.
www.texancultures.com/educator_center/professional_development_for_educators/

Nightengale Archaeological Center Workshop. The Lower Colorado River Authority sponsors archeological workshops for teachers during the summer at the Center on Lake LBJ, near Kingsland, Texas. The workshops, usually held in June, focus on "hands-on" education through interaction with professional and avocational archeologists, providing an exposure to archeological techniques that can be incorporated with classroom studies.
www.lcra.org/parks/natural-resource-areas/Pages/nightengale-archaeological-center.aspx

Books and References

Archeology in the Classroom

Archeological Resource Protection. By Sherry Hutt, Elwood W. Jones, Martin E. McAllister. 1992. A simple and easy-to-use manual for the lay person on how to protect America's precious archeological artifacts and sites. The book includes an overview of the vandalism and looting problem in the United States and a step-by-step discussion of how an archeological crime is investigated and prosecuted.

Archeology and Education: The Classroom and Beyond. Archeological Assistance Study No. 2, edited by K.C. Smith and Francis P. McManamon. 1991.
https://archive.org/details/archeologyeducatoosmit

Archeology and Public Education. Newsletter of the Society for American Archeology: Committee on Public Education. This quarterly newsletter features articles about educational activities in parks and classrooms around the world. Of particular interest is a section for classroom educators that contains lesson plans, information on current courses, events, in-service training, and activities; issues in archeology and education; and evaluations and reviews of new resources.
www.saa.org/ForThePublic/NewsEvents/APEArchives/tabid/77/Default.aspx

Clues to the Past: A Resource Book on Archeology. By Pam Wheat and Brenda Whorton.1990.The Texas Archeological Society prepared this book on archeology in the classroom specifically for Texas teachers. *Clues to the Past* gives a step-by step approach to history using the format of an archeological investigation. A unique section portrays the cultural prehistory and history of seven regions of Texas. The third section of this 208-page book is full of classroom activities for developing individual lessons, class projects, or special projects for enrichment programs. For grades 3–8 and above.

Indian Tribes of Texas: The Customs, Beliefs, and Traditions of the Texas Indian Cultures. By Richard Sorenson. 1987.The 50 pages and more than 25 reproducible exercises of this workbook allow students the opportunity to discover through maps and illustrations how geography influenced the settlement of the earliest inhabitants of Texas. Includes a teacher guide, tests, Essential Elements objectives, map work, student activities, illustrations, and social studies skills. For grades 4–7.

Intrigue of the Past: A Teacher's Activity Guide for Fourth through Seventh Grades. Produced by Bureau of Land Management, Heritage Division. 1996. Supports school curricula by using examples from archaeology, history, and paleontology to facilitate the teaching of science, math, history, social studies, and cognitive skills.

Teaching about Native Americans. By Harvey, Jarjo, and Jackson. 1997.Published by National Council for Social Studies.
www.amazon.com/Teaching-About-Native-Americans-Harvey/dp/0879860731

Teaching Archaeology: A Sampler for Grades 3 to 12. Compiled by Public Education Committee, Workbook Task Group, Society for American Archaeology. A 28-page booklet of information and sample lessons. www.saa.org/Portals/0/SAA/Publications/sampler/teachingarch.pdf

Teaching with Historic Places. *CRM,* Vol. 16, No. 2. 1993. This 23-page special issue of the National Park Service newsletter *CRM* focuses on using historic resources to teach history. Interesting topics include Creating Lesson Plans for Teaching with Historic Places, Parks as Classrooms, and Archeological Public Education Programs. npshistory.com/newsletters/crm/crm-v16n2.pdf

Teaching with Historic Places Study Guides. The National Park Service's Teaching with Historic Places program has developed a series of lesson plans based on properties listed in the National Register of Historic Places. Of particular interest to teachers in Texas is the lesson plan titled "San Antonio Missions: Spanish Influence in Texas." www.nps.gov/nr/twhp/whyplaces.htm

Used Archeology: Classroom Activities by Teachers, for Teachers. Edited by Rita Folse Elliot. This 145-page educator's manual emphasizes a multidisciplinary approach to applying archeological activities in curricula from English to science to math. The activities are designed to capture the attention of students, improve or teach new skills in standard subjects, foster an appreciation for non-renewable cultural resources such as archeological sites, and illuminate the many tasks of an archeologist, from pre-excavation research to post-excavation analysis, reporting, and curation. thesga.org/wp-content/uploads/1992/03/sga_1992_arch_in_classroom.pdf

Texas Indians

Ancient Texans: Rock Art and Lifeways along the Lower Pecos. By Harry J. Shafer. Photographs by Jim Zintgraff.1986. 260 pp. Texas Monthly Press, Austin. The fascinating story of prehistoric peoples who lived in the desolate canyons where the Pecos and Devils rivers flow into the Rio Grande and who left painted on rock evidence of their ancient cultures. Profusely illustrated.

The Caddo Indians: Tribes at the Convergence of Empires, 1542–1854. By F. Todd Smith.1995.Texas A&M Centennial Series, Vol. 56. Chronicles the three Caddo confederacies—the Kadohadacho, Hasinai, and Natchitoches—as they consolidated into a single tribe to face the Spanish, French, Mexican, Americans, and Texans. Also examines the differing approaches of the various European and American nations to the native peoples.

Caddo Indians: Where We Come From. By Cecile Elkins Carter.1995.The author, Cultural Representative of the Caddo Tribe of Oklahoma, provides a readable, chronological account of the Caddo nation in Texas and contiguous states. Describes daily life and Caddo leaders past and present.

The Caddo Nation. By Timothy K.Perttula.1997.The early contacts between European peoples and the Caddoan peoples of the present-day Texas, Louisiana, Oklahoma, and Arkansas region is examined. The focus of the book is on the cultural changes that occurred between the years 1520 and 1800 as interpreted through archeological data and historical, ethnographic, and archival records.

Digging into South Texas Prehistory: A Guide for Amateur Archaeologists. By Thomas R. Hester. 1980. An easily read account of the prehistoric and historic Indians of South Texas (from the Rio Grande to the Guadalupe River, and the coast to the Hill Country). Also describes how archeologists work, the major kinds of artifacts they find in South Texas, and what the avocational archeologist can do to help preserve and understand the regional archeological record.

A Field Guide to Archeological Sites of Texas. By Parker Nunley. 1989. Contains information about archeology in Texas and sites that can by visited by the public in various regions of Texas. The regions are the Panhandle-Plains, Central Prairies, Piney Woods, Edwards Plateau–Hill Country, South Texas, and Trans-Pecos.

A Field Guide to Stone Artifacts of Texas Indians. By Ellen Sue Turner and Thomas R. Hester. 2013. Useful to both amateur and professional archeologists, this guidebook describes how stone tools and ornaments are made and classified. The distribution and estimated age of each type of artifact discussed also are indicated.

Indian Life in Texas. By Charles Shaw. 1987. Features pen-and-ink drawings and narratives of the lifeways of the Caddo, Tonkawa, Karankawa, Delaware, and Comanche Indians. Also included is a photographic essay on the Indians of Texas in 1987.

The Indians of Texas: From Prehistoric to Modern Times. By W.W. Newcomb, Jr. 1972. Describes the history, food habits, material culture, social and political organizations, and beliefs of the major Indian groups in Texas. Although new findings would alter the account of some groups (particularly the

Tonkawas and Coahuiltecans), this book remains the best general and most easily read publication on Texas Indians.

Indians of the Rio Grande Delta: Their Role in the History of Southern Texas and Northeastern Mexico. By Martin Salinas. 1990. Has information about the environment, the Indians, and the Spanish missions of the region.

The Jumanos: Hunters and Traders of the South Plains. By Nancy Parrott Hickerson. 1994. In the late 16th century, Spanish explorers described encounters with Native Americans they called Jumanos. This book explores the role of the Jumanos as traders in a network extending from the Rio Grande to East Texas and Oklahoma.

Stone Artifacts of Texas. By Ellen Sue Turner, Thomas R. Hester, and Richard L. McReynolds. 2011. Taylor Trade Publishing. Useful for academic and recreational archaeologists alike, this book identifies and describes over 200 projectile points and stone tools used by prehistoric Native American Indians in Texas. This third edition boasts twice as many illustrations-all drawn from actual specimens-and still includes charts, geographic distribution maps and reliable age-dating information.

The Texas Cherokees: A People between Two Fires, 1819–1840. By Dianna Everett. 1990. An easily read account of the historic Cherokees in East Texas. Welcomed by Mexico as a buffer to U.S. settlement, the Cherokees found themselves "caught between two fires"—white settlers pushing westward, and western Indians resisting incursions—and between traditional ways and the necessity of accommodation to the whites.

The Tiguas: Pueblo Indians of Texas. By Bill Wright. 1993. A history of one of only three federally-recognized tribal groups still living in Texas; includes both rare historic and contemporary photographs.

Traces of Texas History: Archeological Evidence of the Past 450 Years. By Daniel E.Fox.1983.This book succeeds admirably in presenting, to use the author's words, "Texas history from an archeological point of view to a large and varied audience." By describing the archeological findings at individual sites, it shows how material remains expand the written record of the past.

Books for Young Readers

All about Arrowheads and Spear Points. By Jennifer Owings Dewey. 1989. Henry Holt and Co., New York. For young readers curious about projectile points; discusses who made arrow points and spear points, what they were used for, and how they work. Illustrations and descriptions of some point types.

An Ancient Water Hole: The Lubbock Lake Landmark Story. By Eileen Johnson and Patricia Martin.1990.The 11,000 years of human history at the Lubbock Lake Landmark archeological site is presented in coloring book format. The booklet is designed to stimulate interest among young readers in the science of archeology. Grades 2–5.

The Archaeology of North America. By Dean Snow. 1989. Chelsea House Publishers, New York. A volume in the Indians of North America series. This well-written book discusses the origins of America's Indians, their myths, and their cultures in various regions of the continent up to the time of the European conquest. Middle School to adult.

Atlas of Indians of North America. By Gilbert Legay. 1995. Barron's, New York. Introduces young readers to many aspects of the lives of Native Americans within the ten broad environmental areas of the U.S. Illustrated.

Digging Up the Past: The Story of an Archaeological Adventure. By Carollyn James. 1990. For grades 4–6. A fictionalized account of an archeological excavation by a boy and his mother, who is a professional archeologist. Many terms are explained and reasons for the processes archeologists follow are given. The many illustrations are helpful in explaining the text. An excellent glossary is included.

The Earliest Americans. By Helen Roney Saltter. 1993. Clarion Books, New York. For grades 4 and above, discusses and describes the evidence for who the earliest Americans were and where they came from. Accurate, captivating illustrations.

Everybody Needs a Rock. By Byrd Baylor. 1974. Atheneum Books for Young Readers, Simon & Schuster's Childrens Publishing, New York. For use with "The Reading-Writing Connection—Everybody Needs..." lesson plan in this unit. This and other books by Byrd Baylor are great favorites for young readers.

The Encyclopedia of Native America. By Trudy Griffin Pierce. 1995. 192 pp. Viking, Penguin Books, New York. Divided into seven cultural and geographical areas; explores the vast cultural wealth of North America; sections on the Plains and the Southwest especially relevant to Texas. Illustrated. Middle school and older.

The First Texans. By Carolyn M. Bennett. 1995. Eakin Press, Austin. Tells about the food, clothing, shelter, weapons, tools, customs, religion, and children of the Texas tribes.

Handbook of American Indian Games. By Allan Macfarlan and Paulette Macfarlan. 1958. 384 pp. Dover Publications, New York. Presents 150 easy to play games that provide insight into how American Indians thought, lived, and played. Games can be played indoors or out with little or no equipment. For use with younger readers.

In a Circle Long Ago: A Treasury of Native Lore from North America. By Nancy Van Laan. 1995. Apple Soup Books, Knopf, New York. Illus. by Lisa Desimini. Stories, songs, and poems selected and retold for reading aloud to young children or for being read by older youngsters.

Indian Life in the Texas Big Bend. Edited by Ken Perry.1978.This booklet presents the history of the first people who lived in the Big Bend region through illustrations, text, and games. Grades 4 and above.

Life in a Rock Shelter: Prehistoric Indians of the Lower Pecos. By G. Elaine Acker. 1996.. Hendrick-Long, Dallas. Tells of the rock art, artifacts, and lifeways of prehistoric peoples in the remote Lower Pecos region of Texas.

Mastodon Hunters to Mound Builders. By Peter and Belia Nichols. 1992. Children's book about North American archeology.

Thirteen Moons on Turtle's Back. By Joseph Bruchac and Jonathan London. 1992. Philomel Books, New York. A collection of poems based on Native American legends. Useful for comparing how different cultures view the seasons. Illustrated by Thomas Locker.

Posters

Texas Archeology Month Posters. Available from Archeology Division, Texas Historical Commission. One copy is free with each TAM order. Additional posters, $3.00 each. www.thc.state.tx.us

Audiovisuals Sources

Catalogue of Sources

Archaeology on Film. Compiled and edited by Mary Downs et al. 2d ed. 1995. Archaeological Institute of America. An indispensable guide for anyone interested in films about archeology. The catalogue was indispensable in the compilation of this list of audiovisual sources. www.archaeological.org/education/moviesandtv

Audiovisuals

Pictures of Record, Inc. publishes slide sets of archeological sites and artifacts worldwide. Each set contains between 20 and 110 color slides and includes an introduction, bibliography, and extensive notes for each slide. Of interest to Texas audiences are the following:

Early Caddoan Cultures. Slide show that covers the period from A.D. 800 to 1200 in East Texas and along the Red River in Louisiana and Arkansas. 78 slides on CD-ROM. $65.00. www.picturesofrecord.com/

Late Caddoan Cultures. Covers the Caddoan people from A.D. 1200 to A.D. 1880. 70 slides on CD-ROM. $56.00. www.picturesofrecord.com/

Miscellaneous Audiovisuals.

The Case of the Texas Footprints. Presents scientific evidence showing that dinosaur and human footprints do not occur together in the Glen Rose, Texas, area. 27 min. www.youtube.com/watch?v=BEOAuqP46IM

Seeking the First Americans. Archeologists examine the evidence for the earliest appearance of humans in the New World; among the sites visited is Lewisville in Texas. 58 min. www.der.org/films/seeking-first-americans.html

Useful Sites on the Internet

African American Heritage Preservation Foundation: Information on the foundation, its mission, and its projects, including archeological investigations. www.aahpfdn.org/

Anasazi Heritage Center: Excellent views of artifacts and sites; strong preservation message. Information on Puebloan cultures that were related to Texas cultures of the El Paso area. www.blm.gov/co/st/en/fo/ahc.html

Anthropological Resources on the Web: Includes news of recent archeological discoveries. Also a fun place to begin to surf for archeology. www.aaanet.org/resources/

Anthropology in the News: Good place to access lots of other web pages, including site specific pages. anthropology.tamu.edu/html/in-the-news.html

Anthropology Resources on the Internet: www.anthropology-resources.net/

Archaeology Online: Electronic magazine. Excellent resource for news of important new archeological finds worldwide. archaeologyonline.net/

Archaeology on the World Wide Web: A good place to start for archeology in the United Kingdom, Europe, or around the world. antiquity.ac.uk/Listing/eleccham.html

Archeological Glossary: www.archaeological.org/education/glossary

ArchNet: Access information for Texas by selecting "Regional Views," click the USA on the map, and then "Listing of Links for the American Southwest." Also provides access to numerous other web pages. ari.asu.edu/archnet/

Bureau of Land Management Environmental Education Homepage: Several included activities introduce the concepts of environmental technology, ecosystems, environmental ethics, and archeology. www.blm.gov/wo/st/en/res/Education_in_BLM/Learning_Landscapes.html

Center for Archaeological Research: A good site with extensive links to other archeology sites on the web. car.utsa.edu/

Council of Texas Archeologists: counciloftexasarcheologists.org/

Crow Canyon Archaeological Center: Has information about the ongoing Crow Canyon excavation and laboratory programs for all age levels. This site also contains information about the Center's teacher workshops. www.crowcanyon.org/

Education Index: Has an extensive list of links for both Old World and New World archeological sites. www.educationindex.com/archeo/

Friends of Northeast Texas Archeology: Information about the activities of the group and about the Caddo Indians who once lived in northeast Texas. https://sites.google.com/site/friendsofnetexasarchaeology/

HEB Televentures: History, science, archeology, and more. Check the home page for current programs. www.klrn.org/learning/TeleVentures.aspx

Historic Jamestown: Historic Jamestown in Virginia. Good example of importance of historic archeology at a site that most students will recognize. https://historicjamestowne.org/

Links to Rock Art Sites: Extensive list of links to rock art sites around the world. www.rock-art.com/links.htm

National Park Service Cultural Resources: One of the best sites for archeological resources and links, as well as historic preservation, for all age groups. www.nps.gov/history/

Society for American Archaeology: Good site with information on educational programs, resources, and links. www.saa.org

Society for Historical Archeology: Good site for information about historical archeology. www.sha.org

Texas Archeological Society: More information on Texas's statewide archeological society—and a cosponsor of Texas Archeology Month! www.txarch.org

Texas Historical Commission: Covers all aspects of the agency's archeological and historic preservation activities throughout Texas; includes special features, news, and publications lists. www.thc.state.tx.us

Helpful Agencies and Institutions

Texas Historical Commission

Each division of the commission can be reached at www.thc.state.tx.us. Phone and other contact information for the divisions are provided individually.

Archeology Division

The Archeology Division, Texas Historical Commission, is a sponsor and coordinator of Texas Archeology Month (TAM) and is the central distributor for TAM materials. You may contact this office for answers to questions about prehistoric and historic archeology, prehistoric cultures, and Native Americans. This office has developed many of the educational materials that are used for TAM activities. For more information: www.thc.state.tx.us/preserve/archeology

archeology@thc.state.tx.us

(512) 463-6096

History Programs Division

Contact this division of the Texas Historical Commission for information on historical markers, national register of historic places, educational programming, local history, and museums. www.thc.state.tx.us/preserve/projects-and-programs

history@thc.state.tx.us

(512) 463-5853

Community Heritage Development

Contact this program for information on heritage tourism trails and other tourism information. www.thc.state.tx.us/preserve/projects-and-programs/heritage-tourism

kimberly.klein@thc.state.tx.us

(512) 463-6092

Texas Archeological Society

The Texas Archeological Society is a statewide organization with membership available to all persons interested in archeology. The society initiated the Texas Archeology Awareness program in 1989, which became Texas Archeology Month, as well as being a sponsor of the annual observance, plays a major role on the TAM coordinating committee.

In addition to a yearly bulletin of archeological studies, a newsletter, an annual meeting, and sponsorship of TAAM, the society offers an annual summer field school with participation at all levels of interest and ability. www.txarch.org

American Association for State and Local History

This association is an invaluable source of publications relating to all aspects of historical preservation and museum work. www.aaslh.org

Institute of Texan Cultures

Dedicated to the study and understanding of the diverse ethnic and cultural heritage of Texas, the institute issues catalogs that provide overviews of its programs, publications, audiovisuals, traveling exhibits, and services. Traveling exhibits may be rented for a minimum of one month, and the borrower is charged a rental fee and round-trip freight costs. Contact the institute for copies of its current catalog or additional information. www.texancultures.com/

Bullock Texas State History Museum

The Bullock Texas State History Museum engages the broadest possible audience to interpret the continually unfolding "Story of Texas" through meaningful educational experiences including programs, event and exhibits. www.thestoryoftexas.com

National Trust for Historic Preservation

The National Trust works to save America's historic places and is the leading voice for preservation in the United States. www.preservationnation.org

Society for American Archaeology

The Society for American Archaeology (SAA) is an international organization dedicated to the research, interpretation, and protection of the archeological heritage of the Americas.

Since its inception in 1934, SAA has endeavored to stimulate interest and research in American archeology; advocate and aid in the conservation of archeological resources; encourage public access to and appreciation of archeology; oppose all looting of sites and the purchase and sale of looted archeological materials; and serve as a bond among those interested in the archeology of the Americas.

The SAA maintains listings of archeological societies in most states. In addition, the society provides assistance in many areas, such as public awareness and education (sample curriculum guides are available free to the public). www.saa.org

headquarters@saa.org

(202) 789-8200

Fieldwork Opportunities

Fieldwork in Texas

Texas Archeological Society Field School. During the month of June, the Texas Archeological Society offers an annual 8-day field school, open to all members regardless of age or experience. The projects are directed by experienced professional and avocational archeologists with training available for persons with any level of skill and experience, from novices to old hands. Activities include excavation or survey, lab work, afternoon workshops, and evening lectures. www.txarch.org/Activities/fschool/

Fieldwork around the World

Crow Canyon Archaeological Center. Offers a variety of archeological programs in which people can participate with professional archeologists in scientific research. www.crowcanyon.org/

Earthwatch. For a fee, volunteers are welcome to work with scientists on archeological and natural science projects around the world. earthwatch.org/

Passport in Time Program. Provides opportunities for individuals and families to work with professional archeologists and historians on National Forests across the country. Typical projects include archeological survey or excavation, historic structure rehabilitation, rock-art documentation, and oral histories. www.passportintime.com/

For more information

Archaeology magazine publishes an online travel guide www.archaeology.org/travel/

The Archaeological Institute of America hosts an online annual guide entitled *Archaeological Fieldwork Opportunities Bulletin,* a comprehensive guide to excavations, field schools, and special programs with opening for volunteers, students, and staff throughout the world. Each entry includes essential information about the site, age requirements, application deadlines, costs, and contacts for further information. www.archaeological.org/fieldwork/afob