STONES AND BONES

Prehistoric Tools

from Montana's Past

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Cover image: Petroglyph from Ellison Rock, MHS Mus 1988.14.10

Introduction to the Footlocker

The Stones and Bones footlocker and its user guide have been revamped to include lesson plans extracted from the Montana Ancient Teachings curriculum focusing on the artifacts/items in the footlocker.

This footlocker allows students to view the tools and artifacts associated with archaeology, specifically in Montana sites. Students will be able to use correct terminology and accurate information about archaeology after using this footlocker. The footlocker and associated lesson plans can provide an introduction to the world of archaeology and what archaeologists have learned about Montana prehistory through archaeology and related scientific disciplines.

The narrative "Ancient Tool making in Montana: Historical Overview for Teachers and Identification of Footlocker Artifacts" (pp. 14–19) provides an overview that can be used by both students and teachers. More detailed narratives on a variety of subtopics are included in the lesson plans. Teachers will find it helpful to review both the historical overview on page 14 and the various lesson plan narratives to decide which ones they want to assign their students.

There are a few other things teachers should keep in mind as they present this material to their students.

First, it is important to avoid presenting archaeology as a treasure hunt. Archaeologists seek knowledge of the past through a rigorous scientific process. Encouraging students to look for treasures in the ground may sound romantic and motivating, but it is seen as looting by archaeologists, and often it is illegal. We hope you will convey to students the ethic that the past is a shared heritage. The true romance of archaeology is not in finding treasures, but in helping people to understand their shared past.

Second, although archaeology is a scientific approach to understanding artifacts and what they can tell us about past people and behavior, it does not provide the last and only word about ancient people. Much of what is said here is based on theories supported by evidence—but archaeological theories can and have changed as new evidence is brought to light.

In addition, archaeology is not the sole perspective we have for understanding the past. Religions and Native American beliefs and oral tradition sometimes appear to differ with archaeology. Ideas about the migration of early people to the New World across the Bering Land Bridge are a case in point, and teachers particularly need to be aware that many Indian people disagree with the Bering Strait theory. Most tribes believe that they originated in their homeland, not in some foreign continent. This issue is addressed in OPI's Essential Understanding Regarding

Montana Indians 3: "each tribe has its own oral histories, which are as valid as written histories."

Finally, teachers need to be aware that this footlocker contains artifact replicas, not actual artifacts.

Ancient human-made artifacts are often copied or replicated for use in exhibits and for study. Replicas of tools such as spear points and arrow points, or arrowheads, may be formed by making a cast or mold. For example, a mold in the shape of a spear point can be used to make many replicas of a real spear point.

Museums use replicas in public exhibits and in teaching kits. The real artifacts may be rare and considered valuable because they tell us of our past as human beings. These artifacts are kept safe in storage while replicas take their place in public places.

Anzick site. Richard Sims, photographer. Courtesy Montana Historical Society State Historic Preservation Office.

The Anzick Site

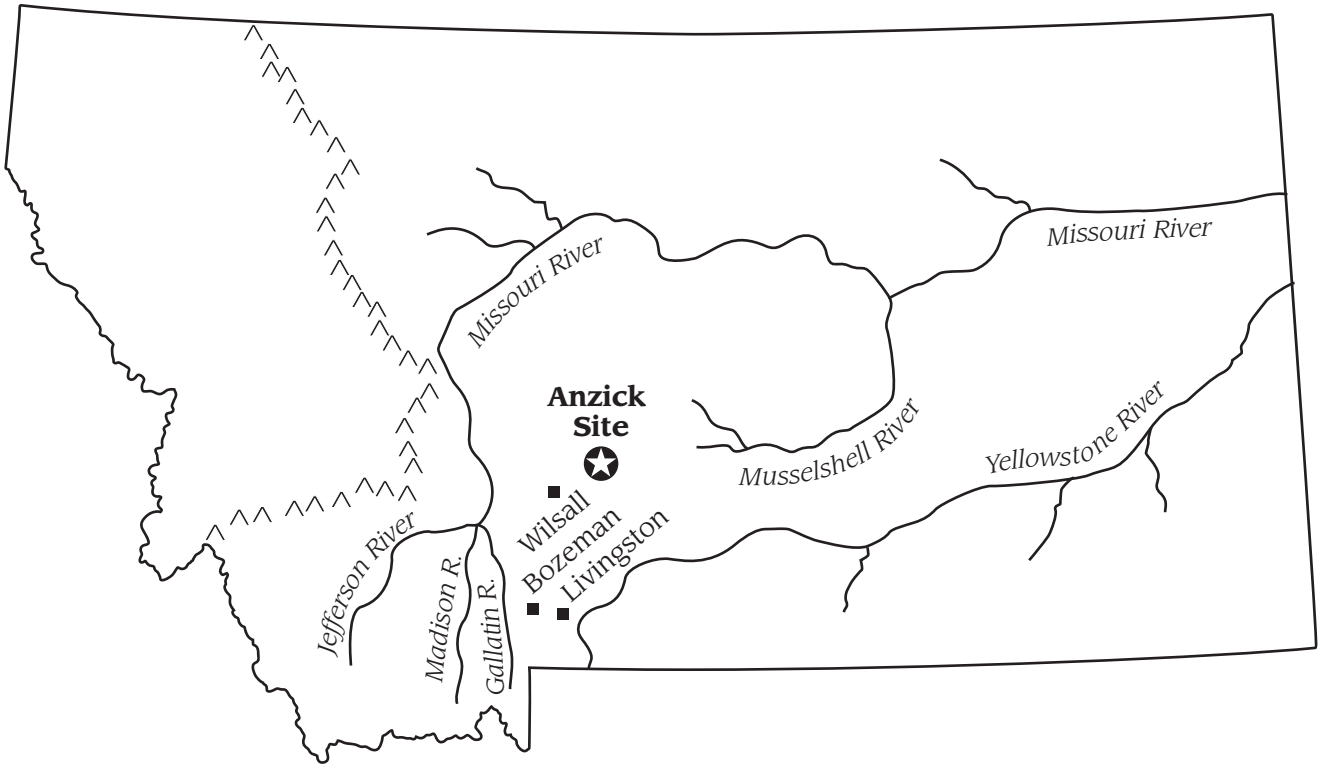
Many archaeologists believe that about 12,000 years ago, near the end of the Ice Ages, the first people to come to North America walked across a land bridge which stretched between Alaska and Asia. The area where the land bridge was is now underwater and is called the Bering Strait. The people crossed the bridge because they were looking for a new home. Some of these people decided to settle in Montana. Not everyone agrees with this theory. How people first came to Montana is heavily debated.

We do know that one of the earliest places with evidence of people in Montana is in an area along Horse Creek, just a short distance south of a small town named Wilsall, near Livingston, Montana. This archaeological site is called the Anzick Site. Archaeologists know that prehistoric people once lived at the Anzick site because ancient tools, made by hand, were found there.

In May of 1968, two men, Ben Hargis and Calvin Sarver, discovered the Anzick Site. After collecting rocks to be used in building a new high school, Calvin drove the load of rocks into town, leaving Ben alone at the site. While he was waiting, Ben decided to fill a hole in the road with some of the same rocks. As he was shoveling, Ben saw an artifact in the dirt. When Calvin returned to the site, Ben told him of his discovery. Excited about the artifact, the two men searched the area and found more artifacts. They told the people who owned the land about their discoveries. The land owners' names were Melvyn and Helena Anzick, so the area became known as the Anzick Site. They all knew how important the discovery of these artifacts would be to others, so they contacted an archaeologist to come and study the area and the artifacts.

Many archaeologists have since studied the Anzick Site and its artifacts. They have learned that the ancient people who once lived there were from the Clovis culture, which is one of the earliest known periods of human settlement in North America. This period of time dates to around 10,000 BC, or 12,000 years ago. Most archaeologists believe that the tools were purposely left at the Anzick site as a cache, or maybe as part of a burial. Many of the artifacts were smeared with red ochre, or red earth, which probably means the artifacts were thought to be special or sacred.

There were over 100 artifacts found at the site. Some of them are: Clovis spear points, biface cores, bone foreshafts, Clovis blanks, and preforms. The Anzick Site artifacts are on display at the Montana Historical Society in Helena, Montana.


Missouri River
Missouri River
Anzick
Site
Musselshell River
Yellowstone River
Wilsall
Bozeman
Livingston
Jefferson River
Madison R.
Gallatin R.

STONES AND BONES: INVENTORY

Borrower: _____ Booking Period: _____

The borrower is responsible for the safe use of the footlocker and all its contents during the designated booking period. Replacement and/or repair for any lost items and/or damage (other than normal wear and tear) to the footlocker and its contents while in the borrower's care will be charged to the borrower's school. **Please have an adult complete the footlocker inventory checklist below, both when you receive the footlocker and when you repack it for shipping, to ensure that all of the contents are intact.** After you inventory the footlocker for shipping to the next location, please mail or fax this completed form to the Education Office.

Item	Before Use	After Use	Condition Of Item	MHS Use
2 Bifacial Knives/Preforms (tray 1)				
1 Bifacial Core (tray 1)				
1 Crude Obsidian Tool (tray 1)				
1 Hammerstone (tray 1)				
1 Abrading Stone (tray 1)				
1 Unretouched Flake (tray 1)				
1 Stone End-Scraper (tray 1)				
5 Early Prehistoric Points (tray 2)				
6 Middle Prehistoric Atlatl Points (tray 2)				
6 Late Prehistoric Atlatl Points (tray 2)				
1 Bone Awl (tray 3)				
1 Bone Scraper (tray 3)				
1 Bone Beamer (tray 3)				
1 Antler Tine (tray 3)				
1 Antler Billet (tray 3)				
1 Bone Handled Bifacial Knife (tray 3)				
1 Antler Hafted End Scraper (tray 3)				
4 Obsidian Flakes and 2 Obsidian Cores (tray 4)				

(continued)

INVENTORY *(continued)*

Item	Before Use	After Use	Condition Of Item	MHS Use
1 Pitch Stick (tray 4)				
1 Foreshaft (tray 4)				
1 Mano and Metate set (tray 4)				
1 Piece of Sinew (tray 4)				
1 Bone Needle Preform				
1 Bone Needle with Hole				
1 Bone Needle without Hole				
1 Stone Drill (tray 4)				
1 Stone Awl (tray 4)				
1 Flint Knapping Kit (tray 4) containing: • 1 hard leather thigh protection pad • 1 soft leather hand protection pad • 1 copper tine				
1 Atlatl (tube)				
1 VHS Video: *People of the Hearth*				
1 Bitterroot Sample and Photo of Bitterroot				
1 PowerPoint and Script				
1 Ancient Teachings Curriculum Guide				
1 User Guide				
2 Magnifying Glasses				

Education Office, Montana Historical Society, PO Box 201201, Helena, MT 59620-1201

Fax: 406-444-2696, Phone: 406-444-4789, mhseducation@mt.gov

Teacher's Name _____ Phone Number _____

School _____ Footlocker Reservation Dates _____

Footlocker Use: Some Advice for Instructors

How do I make the best use of the footlocker?

In this User Guide you will find many tools for teaching with objects and primary sources. We have included topical narratives to introduce various subjects—from prehistoric technology to the importance of preserving archaeological sites. Section three contains lesson plans for exploration of the topic in your classroom. Some of these lessons utilize the objects and images in the footlocker, others stand alone. In section five there are introductory worksheets on how to look at and read maps, primary documents, photographs, and artifacts. These will provide you and your students valuable tools for future study.

What do I do when I receive the footlocker?

IMMEDIATELY upon receiving the footlocker, take an inventory form from the envelope inside and inventory the contents in the "before use" column. Save the form for your "after use" inventory. This helps us keep track of the items in the footlockers and enables us to trace back and find where an item might have been lost.

What do I do when it is time to send the footlocker on to the next person?

Carefully inventory all of the items again as you put them in the footlocker. If any items show up missing or broken at the next site, your school will be charged for the item(s). Send the inventory form back to: **Education Office, Montana Historical Society, Box 201201, Helena, MT 59620-1201,** or fax at (406) 444-2696.

Who do I send the footlocker to?

Before the reservation period began you received a confirmation form from the Education Office. On that form you will find information about who to send the footlocker to next, with a mailing label to affix to the top of the footlocker. Please insure the footlocker for $1,000 with UPS (we recommend UPS). This makes certain that if the footlocker is lost on its way to the next school, UPS will pay for it and not your school.

What do I do if something is missing or broken when the footlocker arrives, or is missing or broken when it leaves my classroom?

If an item is missing or broken when you initially inventory the footlocker, **CONTACT US IMMEDIATELY** (406-444-4789), in addition to sending us the completed (before and after use) inventory form. This allows us to track down the missing item. It may also release your school from the responsibility of paying to replace a missing item. If something is broken during its time in your classroom, please call us and let us know so that we can have you send us the item for repair. If an item turns up missing when you inventory before sending it on, please search your classroom. If you cannot find it, your school will be charged for the missing item.

Footlocker Evaluation Form

Evaluator's Name _____

Footlocker Name _____

School Name _____ Phone _____

Address _____

City _____ Zip Code _____

1. How did you use the material? *(choose all that apply)*

   ☐ Schoolwide exhibit ☐ Classroom exhibit ☐ "Hands-on" classroom discussion

   ☐ Supplement to curriculum ☐ Other _____

2. How would you describe the audience/viewer? *(choose all that apply)*

   ☐ Preschool students ☐ Grade school—Grade_____ ☐ High school—Grade_____

   ☐ College students ☐ Seniors ☐ Mixed groups

   ☐ Special interest ☐ Other _____

3. How many people viewed/used the footlocker?_____

4. Which of the footlocker materials were most engaging?

   ☐ Artifacts ☐ Documents ☐ Photographs ☐ Lessons ☐ Video

   ☐ CD ☐ Books ☐ Slides ☐ Other _____

5. Which of the User Guide materials were most useful?

   ☐ Narratives ☐ Resource Materials ☐ Biographies/Vocabulary

   ☐ Lessons ☐ Other _____

6. How many class periods did you devote to using the footlocker?

   ☐ 1–3 ☐ 4–6 ☐ More than 6 ☐ Other_____

7. What activities or materials would you like to see added to this footlocker?

FOOTLOCKER EVALUATION FORM *(continued)*

8. Would you request this footlocker again? If not, why?

9. What subject areas do you think should be addressed in future footlockers?

10. What were the least useful aspects of the footlocker/User Guide?

11. Other comments:

Ancient Tool Making in Montana: Historical Overview for Teachers and Discussion of Footlocker Artifacts

Montana Long Ago

Long before trappers, traders, miners, and settlers came to Montana, the people who lived here had everything they needed. There were animals to hunt, water to drink, and plants to gather. In this vast place, the first people learned how to use what the land offered. They made comfortable homes for themselves, they made their own clothes, and they hunted and gathered the food they needed to survive. But they needed tools to do these things.

Making Tools

Early people were very good at figuring out how to find or make everything they needed. They traveled in groups as the seasons changed, hunting and gathering different things in different places. One place might have a special kind of cobblestone, perfect for making hammers. Another place might have a special kind of flint for making arrowheads, or *projectile points,* and scrapers and knives.

The people used every part of the animals they hunted. For example, they sharpened small bones to make needles for sewing and awls for punching holes. They laced pieces of tanned hides together with thread made of sinew. As traveling groups met other travelers, they shared their knowledge and ideas. Children learned from their parents where to find the needed materials, how to make the tools they needed, and how to use them.

Stone tools were very important to early people. These tools made it possible to kill animals, prepare meat for cooking, and scrape hides for clothing, blankets, and shelter. Tool making for hunting especially required great skill and was done mostly by men, who passed the knowledge down to their sons and grandsons. We call these skilled tool makers *flint knappers*. The process of making tools is called *flint knapping*.

Projectile points (spear points, dart points, and arrow points), knives, and scrapers are among the most common, useful kinds of tools flint knappers made. Most often they are made from flint, chert, quartizite, basalt, or obsidian. Obsidian, a glass-like material made from the lava of a volcano, made very sharp tools. There is little obsidian in Montana; early people probably traded for it.

A flint knapper had to know what type and size of rock he needed to make a certain kind of tool or point. He might begin with a large rock if he wanted to make a large spear point. By hitting the rock, or *core*, with a hammerstone, he could knock off the outer rind. When the rind was gone, then he would knock smaller flakes off the core, shaping the tool. Finally, with the tine of an antler he could push tiny flakes off the sides, sharpening the tool with amazing precision. Knappers could resharpen old tools or make broken tools into knives or scrapers or drills.

Women sometimes made stone tools, too. Their tools, mostly used to process food, were simpler to make. They were, however, no less important.

Women used cobbles—rocks smoothed round by river water—and other kinds of stones. Sometimes they used the cobbles in their natural shape and sometimes they shaped them. They used stone *mauls*, like hammers, to break bones and pound or grind meat. They also used *manos* and *pestles*, round or long smooth stones small enough to fit well in their hands, to grind seeds and berries. Women used manos with a naturally shaped lap-sized flat stone called a *metate*. Women always used manos with metates. Sometimes they split cobbles in half and used the rough edges to scrape hides.

Material Culture

The kinds of tools Montana's ancient families used were similar between groups but not always exactly alike. Archaeologists study these differences. Tools changed over time as the people practiced and became more skilled. Today, what long ago people made and left behind is called their *material culture*. Archaeologists study material cultures to try to discover how the first Montanans made the tools they used, what they used them for, and how their tools changed over time.

Tools and Time Periods

Archaeologists usually divide the different styles of tools into three time periods: Early, Middle and Late. The oldest is the Early Period, from about 12,000 to 6,000 or 7,000 years ago. During this long ago time, people hunted large animals like wooly mammoths, giant sloths, and a huge type of bison. All these animals are now extinct. They used spear throwers called *atlatls*. An atlatl required a large spear point hafted, or fastened, onto a slender stick or *shaft*. These ancient tool makers made beautiful projectile points. In the hands of a skilled thrower, the spear points could easily kill very large mammals.

The Middle Period, from about 6,000 to about 2,000 years ago, was a time of change. Tool-makers discovered new ways to make tools better and they became better at making them. Hunters sometimes still used the atlatl, but they also began to use the bow and arrow. The style of point began to change as atlatls were used less often and bows and arrows became the weapon of choice. The animals being hunted were not as large as the extinct animals their ancestors hunted. This is why projectile points over time became smaller as animals and kinds of weapons changed.

During the Middle Period, archaeologists begin to find manos, metates, pestles, and mauls shaped for specific uses. Early people used the same tools, but they didn't usually shape them. Instead, they simply used natural stones. They are therefore hard to identify since they are natural rocks.

The last period and most recent is the Late Period, from about 1,700 years ago to the time when the first European trappers and traders began to come to Montana in the late 1700s. There were many changes. Native people acquired horses and guns, and they began to use metal tools instead of stone. In Montana, most stone tool use ended by the mid-1800s. But technological and stylistic changes took place at different times in different places. Therefore, the "years before present" dates are only approximate. Estimating the changes

and sequences of the different types of points and tools is called *seriation*.

You can see that the projectile points in **Tray 2**, for example, are different sizes, shapes, and styles. Archaeologists study these differences. They are important because the differences provide clues that help us understand changes over time. Archaeologists combine these clues with other ways of dating things. *Stratigraphy*, the order that artifacts were buried as sediments or soils accumulated, and *carbon 14 dating* are two other methods archeologists can use to discover when a tool was made or used.

Projectile points generally became smaller through time and the style of the base, the part that attached to the shaft, changed. This is partly because the method of delivery changed. Early Period hunters used the largest points with large, heavy spears they threw by hand. These large points have something like notches at the base for attaching to the shaft. A little later, medium sized points with stemmed, corner, or side notches were used on lightweight, very long—maybe 4 feet—shafts. Ancient hunters threw these spears with an atlatl (or "spear thrower") like the replica **atlatl** provided in the trunk. During the Late Period the bow and arrow replaced the atlatl in most places. However, in some places, hunters used both bows and arrows and atlatls side by side for a very long time.

Tool-making techniques evolved as people became more skilled and the size of animals hunted and the types of weapons used changed over time. **Stones and Bones Lesson 2** explains the process of flint knapping (making tools by knocking or pushing flakes off a larger stone).

Modern Flint Knapper's Kit

There are still people who practice the fine art of flint knapping. The kit in this trunk includes tools needed to make stone weapons and implements. The large piece of leather is a **thigh protection pad** and the smaller one is a **hand protector**, like a glove. These protect the knapper from being cut by flying particles and sharp edges. Ancient knappers used a small antler tine to press along the edges of a weapon, removing tiny chips to sharpen it. The **copper tine** is a modern implement used like an antler for this same purpose. The **notched foreshaft** is what the point would be attached to—the base of the point fits into the notch. The **pitch stick** is a stick with a glob of pine pitch on the end. Pitch is the sticky stuff you find on pine trees. When it is warmed and softened, it is like glue or clay. A glob of pitch on the notched shaft glues the point onto it so that it can be then wrapped with sinew and *hafted*, or fastened.

Sinew

Sinew comes from animal tendons and separates when dried, just like thread. Ancient people of all time periods used sinew not only for sewing, but also for wrapping points onto spears and arrow shafts. When sinew is wet, it is very soft and can be easily worked as a wrapping. Once wet sinew dries, it is very sturdy and holds the point securely to the shaft.

Tray 1

If a flint knapper wanted to make a large knife or spear point, he would first

choose a large rock of suitable material such as obsidian, chert, flint, quartzite, or basalt. This type of material, in skilled hands, could be "worked" with little breakage. The knapper first systematically removed the outer rind and reduced the rock using percussion, by hitting it with another rock called a **Hammerstone**. Once the larger rock was reduced, the knapper worked each side of the remaining rock, taking off flakes until the rock was the desired shape and thinness. Flakes that came off the larger rock were usually excess. The **Unretouched Flake** is an example of the waste. Sometimes, however, flakes were sharpened for use as other types of tools. The **End Scraper** is a flake that has been sharpened on only one edge. Tool makers usually worked tools on only one side of an edge. These *unifacial* (worked on one face or side only) tools were used for cleaning and thinning hides or shaping wood into pipestems and arrow shafts. End scrapers occur from the Early Period to the Late Period.

Large flakes could be shaped into points. Obsidian is not found in Montana, but was highly prized and acquired in trade. The black glass-like material comes from lava. The retouched edges were razor sharp. This **Crude Obsidian Tool** came from a large flake.

What remains of the large rock after the flakes have been taken off on both sides is called a **Bifacial Core**. *Bifacial* ("both faces") means that both sides have been worked. As a knapper hit the rock with his hammerstone, the flakes fell off in a planned sequence (but breakage often happened!) and the core became a sort of uniform starting place like a blank or **Preform**. The knapper used these preforms to make tools when he needed them. Many bifacially reduced cores were also sharpened on the edges and used as is, like the bifacial core example. Or, with further shaping, they became large tools like **Bifacial Knives**. The finished point would be polished or smoothed with an **Abrading Stone**. These stones were usually naturally shaped sandstone, pumice, or other type of coarse rocks. They were also used to smooth bone and animal hides.

Obsidian Flakes

These flakes came from a larger piece of obsidian. You can see how flint knappers knocked these pieces off and could sharpen their edges for use as tools or shape them into points. Often, however, they were only waste products. Scatters of flakes, called *lithic scatters*, are common in Montana and tell archaeologists that someone, at some time, made tools at that place.

Tray 2

If a knapper wanted to make a number of smaller arrow points instead of one bifacial core or preform, he chose a suitable rock and removed the outer rind with a hammerstone. This time, however, production of flakes was the goal. In some cases, the tool maker formed points from flakes that were worked bifacially. This sequence, or *seriation*, demonstrates how points changed over time.

Often the larger the point, the older it is. The **Early Prehistoric Spear Points** are the largest and the most crudely made. Their bases are not notched. These early points would have

been used to kill large mammals. These points, used with hand-held spears, likely would have fit into a notched shaft like the one included in the knapper's kit, only much larger.

The **Middle Prehistoric Atlatl Points** are different shapes and smaller. As knappers became more finely skilled, they began to notch their points, which made attaching and wrapping with sinew much more efficient. As large mammals became extinct, early hunters did not need such big projectile points for their weapons. Besides that, the atlatl increased the power behind a man's throw, and smaller points, skillfully made, could kill very large animals.

Late Prehistoric Atlatl Points are even smaller. These tell us that the animals being hunted were smaller, like rabbits, deer, and birds, and that the hunters were very skilled. They also reveal a high degree of craftsmanship. Flint knappers were truly artists who left their work behind for us to study.

Tray 3

Knappers used other utensils for refining their points and tools. Most knappers switched from a hard hammerstone to a softer hammer or *billet.* A shaped **Antler Billet** worked well for this purpose. As the tool became smaller and more fragile, even the soft billet could become clumsy, so knappers then used *pressure flaking* for final shaping or reshaping and sharpening tools. In pressure flaking, the knapper used a bone *tine* like the **Antler Tine** (or the copper tine in the modern flint knapper's kit) to push tiny flakes off rather than strike them off with some sort of hammer. Tools like points, drills, and knives were generally flaked on both sides (bifacially). However, simpler tools were also made from flakes and worked on one side only.

Stone tools for hunting were not the only tools important to early people. Other types of tools were also essential for preparing hides, sewing, and cooking. Women did much of this work. *Beamers*, made from the hind leg bone or tibia of deer, were very specialized tools. Most archaeologists believe that a **Bone Beamer** was used to remove hair and tissue from hides. The leg bone was deeply grooved lengthwise to make a slot and two parallel knife blades fit into the grooves. Hides were stretched over beams or poles and, using two hands, the worker drew the beamer across the hide, scraping it. Beamers would wear out in the middle and snap into two pieces. One such piece, like the **Bone Scraper**, has been recycled and the broken edge serrated for use as a scraping tool. Broken pieces could also be used for things like a **Bone Awl** to punch holes in hides for sewing. Bone splinters, broken during butchering or broken off of other tools were made into sewing needles. In the Early and Middle Periods, awls were crude bone splinters. By the Late Period, awls were more carefully made with one end rounded and polished and the other tapered to a point. The joint end of the bone fit perfectly in the hand. Porcupine and marmot incisor teeth were also used as awls.

Examples of hafting with animal sinew and pine pitch to bind tools to shafts or handles can be seen in the **Antler Hafted End Scraper** and the **Bone Handled Bifacial Knife**.

Bone Needles

Bone tools occur in all periods. Simple straight needles are common in the Middle Period while needles with eyes are more common later in time. But the frequency of differences could easily be because of their fragile nature and rare preservation.

Women's Work

While the art of flint knapping was handed down from father to son, women and their daughters used simpler tools, making them as they needed them. Women likely made or sharpened knives and scrapers sharpened quickly on one side. They also used natural materials that they shaped to match their needs.

Women did much of the meat processing. Large stones called **mauls** served as hammers, used during butchering to break apart carcasses and break large bones for their marrow. Grooved mauls are most commonly from the Late to the Historic periods. Women also used mauls to pound berries and pulverize dried meat. This mixed with grease made pemmican, an important food staple. Mauls were most often made from round or oval river cobbles. Useful bone tools were byproducts of butchering.

The **pestle** is a Late Middle Period to Late Period tool. In Late Period western Montana, pestles were shaped by pecking, grinding, and finally polishing to a characteristic "potato masher" shape.

Manos were for grinding small seeds and other foods. They appear during the Middle Period. They might have been used earlier, but there is no proof. They were pecked and abraded into cylinders or slightly flattened discs to fit the hand comfortably. If they became too smooth, women roughed the surface by pecking at it with a small **hammerstone**. Some manos appear so natural and have been so little shaped that the pecking is the best indication of human use. While mauls and pestles were used in Montana without a mortar, or other bowl-like matching container or grinding platform, manos were used only with metates.

Metates were lap-sized, roughly rectangular to oval-shaped flat blocks, usually of sandstone and sometimes of granite. Metates often are unshaped and occur naturally. But sometimes they were intentionally shaped with broken and roughed flat ends, sides, and grooved bottoms. Shaped metates have a shallow bowl, dished out just enough so that tiny seeds and resulting flour do not spill over.

For further information on making arrow and spear shafts, see http://www.thudscave.com/npaa/darts/wrenches.htm

Amazing Montanans

Dr. Thomas A. Foor is an archaeologist.

Dr. Thomas A. Foor, Missoula, is an archaeologist. Tom has been involved in archaeological fieldwork since 1970, and he even teaches archaeology. He says, "Archaeology is all about *the thrill of discovery*."

Tom has always read books about explorers and adventurers and has been interested in how humans became as we are today. Human diversity—how and why humans organize into groups—presents many questions for him. Some of the questions he asks are: Why aren't we all members of just one society? Why do we even live in groups? Why isn't there just one kind of society? Why isn't there just one way of making a living?

He searches for answers to his questions through the "time machine" of archaeology. Like the explorers he's read about who searched for people in new places, Tom explores people from historic and prehistoric times, using archaeology to transport him to the past. Archaeology allows him to look at how, why, and under what conditions new human societies or communities formed. He uses the artifacts, features, and ecofacts that people left behind to study their lives and answer his questions.

Tom loves both historic and prehistoric archaeology. The most numerous sites in Montana are historic and late prehistoric. The cultures studied at most prehistoric Montana sites show a well-developed record of family-based societies. These sites are important to address specific concerns of how the human world works. When sites are well preserved and left undisturbed, they are valuable—and fun—to study. Early sites may represent ways of life for which we have no modern comparisons, ways of life that are now extinct! Tom hopes to find a complete and intact living floor from a prehistoric campsite. It would help him identify different groups who may have lived within the site.

Tom was born in Washington, D.C., and attended elementary and secondary schools in Montana and California. He received his Bachelor's and Master's degrees from the University of Montana. He obtained his doctorate from the University of California, Santa Barbara, and completed postdoctoral studies at the University of Michigan. In the past, Tom worked as the Montana State Archaeologist for the Montana Historical Society, Helena. Today, he is a professor of Anthropology at the University of Montana, where he guides archaeological students to do their best in searching for answers to the questions archaeologists ask.

Many instructors inspired Tom throughout his schooling. Dee C. Taylor, University of Montana, taught him the importance of being able to tell others about the excitement of archaeology. Albert C. Spaulding, University of California, Santa Barbara, taught him the significance of clear, logical, goal-oriented thinking, and concise communication. William Duncan Strong, Columbia University, instructed him in

the value of being a good writer. Clyde Coombs, University of Michigan, taught Tom the importance of using concepts that are measurable.

Tom's archaeological career began with work in the coal lands of southeastern Montana and north-central Wyoming. He found and excavated campsites, rock art sites, quarry sites, and bison kill sites. He has worked in locations near Great Falls and in western Montana. He has performed surveys and test excavations in Washington and Idaho, usually as part of cultural resource management projects. Tom has surveyed and excavated several California coastal sites, finding and investigating several large villages and shell middens. Middens are ancient garbage sites.

Tom has also worked in Western Europe, where he unearthed his most exciting find. When he was a student worker in France, he excavated a small statuette. Only about sixty-five statuettes of the kind he found have been discovered in Europe, from the east to the west. They all date from about the same time, the Upper Paleolithic period. Nobody really knows what they were used for, but they have many characteristics in common. If nothing else, these statuettes suggest that people all over Europe shared symbolic meanings long ago. Tom would love to find another!

Tom says that the best and most significant site is always the one he's currently working on. Tom is continuing seventeen years of work in southwestern Montana's Centennial Valley, at the Tree Frog site. Tree Frog is a campsite with radiocarbon dates suggesting people lived there sometime in the past 300 years. Artifacts discovered at Tree Frog include pieces of a very distinctive type of pottery, arrow points made of volcanic glass (mostly from central Idaho), and historical trade goods like metal tools and a glass trade bead. The site is significant because it was occupied by people who were undergoing changes in how they defined their social identity. If those changes can be understood and interpreted, archaeologists are closer to answering their questions about human diversity.

As he studies the past, Tom is most intrigued with how Montanans were in indirect contact, or maybe direct contact, with members of other societies who lived all over North America. He is also amazed at the ingenuity shown by early Montanans in their use of the American bison.

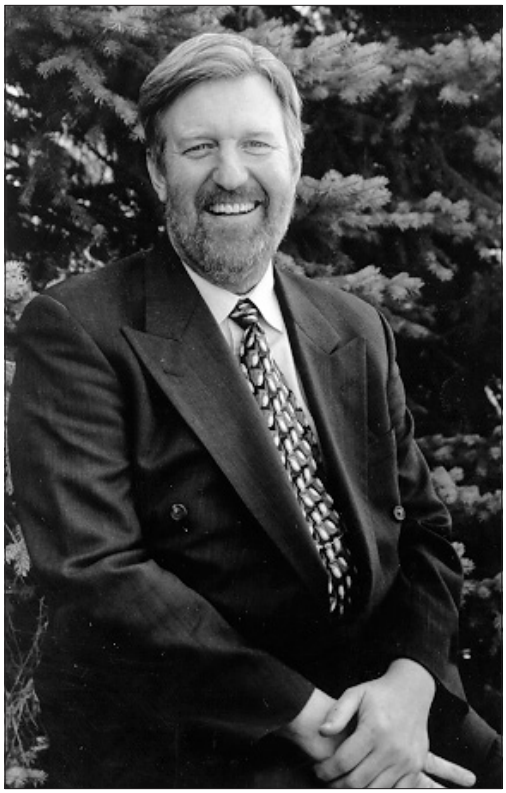
Since archaeology is all about studying past human behavior, archaeologists must look for patterns. They then compare patterns of behavior that happened repeatedly and that resulted from similar conditions. They eliminate behavior that appears to have occurred randomly. Tom believes that the digital computer provides many remarkable and measurable tools to help recognize these patterns. He thinks these tools hold great promise for understanding people of the past.

It is very easy for Tom to get excited about archaeology. He loves his work. The toughest part of his work is giving low grades to students who do not do very well. He suggests that you study human behavior if you are interested in archaeology. A great archaeologist must have insights into people and how they behave. Also, since archaeological data usually comes from the ground,

study dirt. Sedimentology, the knowledge of how dirt accumulates and erodes, and soil sciences, which study what happens to dirt after it accumulates, are both basic requirements for an archaeologist. After you gain expertise in these areas, you can specialize in other areas including botany, zoology, ecology, chemistry, physics, art history, or geology. Broad knowledge in many areas creates the best archaeologists.

When asked what he believes the future holds for archaeology, Tom responds: "If we want to continue doing archaeology, we need to convince the public that our work is worthwhile. We must ask questions the public wants answered. Since tax dollars pay for most archaeology, we have to investigate sites most likely to provide answers to those questions. We have to spend our valuable money and time researching sites where we can accurately reconstruct events. I think the future is limitless for young, technically proficient archaeology students who are excited about people and human behavior!"

When he's not involved with an archaeological project, Tom's hobbies are traveling, playing golf, fishing, hiking, and swimming. He is also an amateur radio collector. His family members are his father, a surgeon, and his mother, who works in public relations. His brother works in law enforcement, and his sister is a nurse.



Tom Foor is an archaeologist. He teaches anthropology to students at the University of Montana, Missoula.

Amazing Montanans

Karma Cochran is an archaeologist who studies Montana's ancient people.

Karma Cochran is an archaeologist who studies Montana's ancient people. As an enrolled member of the Gros Ventre Tribe, Fort Belknap Indian Reservation, Montana, Karma found becoming an archaeologist a choice she made easily. Her study of Native American people of the past allows her to preserve aspects of Indian culture lost through events in American settlement. She learns about tribal histories, then documents them for present and future generations. Karma says, "Native American people have been here a long time. Our history and culture is rich in tradition." Karma is proud of her heritage and shares it with others through her archaeological work.

Karma has been fascinated with archaeology for as long as she can remember, and she credits her mother for her interest. Her mother held a job with the Indian Health Service, providing health care to Native American people. The job required moving to various locations, and, her mother loved to travel. Karma recalls visiting museums and parks dedicated to archaeology and dinosaurs. As the youngest of ten children, she remembers her mom taking her everywhere! She saw some amazing places when living in Arizona near Canyon de Chelly National Park, an area very rich in cultural and archaeological sites.

Karma attended elementary and secondary schools in Montana, Arizona, and Wyoming. In 1997, she received her Bachelor's degree in Anthropology, and a minor in Native American Studies, from the University of Montana, Missoula. While in college she maintained good grades to participate in a cooperative education program with the Bureau of Indian Affairs (BIA). During summer and winter breaks from school, Karma received on-the-job work experience as a student trainee archaeologist. In return, the BIA helped pay her tuition and other college expenses. Upon graduation, she was hired full-time by the BIA. Karma is now working toward her Master's degree in Anthropology, and hopes to achieve a doctorate.

Karma's archaeological work with the Bureau of Indian Affairs covers Indian reservations in Montana and Wyoming. She has worked on all reservations in these two states. The artifacts and features she finds provide evidence of prehistoric and historic occupation, such as old houses dating back to the first homesteading. Karma has yet to work outside of the United States. She hopes to travel to South America and research the rich history of ancient people on that continent.

Karma finds all aspects of Montana's past and people intriguing. She prefers to study prehistoric archaeology because her people have inhabited this continent for thousands of years. She enjoys using historic archaeology to study cultural changes brought to Native Americans by contact with settlers, and she likes to research early pioneer life.

Karma's favorite Montana site is Snake Butte, located on Fort Belknap Indian Reservation. Snake Butte provides an excellent representation and concentrated sample of Plains rock art. The images there range from handprints to a variety of animal forms. It is a good site for analyzing and comparison with other Montana rock art. Snake Butte also gives insight into elements important to early Native Americans, as well as their lifestyles and history. Other archaeological sites near Snake Butte offer more information that helps archaeologists interpret the area's use over time.

The most interesting sites Karma has found include those with both large rock alignments and tipi rings on Fort Belknap Indian Reservation. The rock alignments, or buffalo runs, are longer than any alignment she has seen. The tipi ring site includes over fifty rings and is, by far, the largest campsite she has surveyed. These sites provide insight into the area's habitation before reservations were established. They are located on Fort Belknap and confirm that early Native Americans used these places for hunting and camping purposes.

Karma states that one of her most exciting finds was not even archaeological. It was paleontological. She attended a class at Egg Mountain, near Choteau, Montana, where all kinds of dinosaur fossils are found. During a field trip, Karma noticed a bone sticking out of the ground. With help from the staff, she excavated the bone. She had found an adolescent duck-billed dinosaur leg bone or arm bone. She thought it was pretty cool! But, what Karma would most like to find at a Montana site is archaeological: a mammoth bone with a Paleoindian Clovis point stuck in it. This would prove that humans occupied Montana and hunted these animals 12,000 to 14,000 years ago.

Karma's favorite method of analysis is to map sites using Global Positioning System (GPS) satellites. She likes the accuracy of pinpointing a site and using a computer to record information on the spot. GPS mapping offers an excellent look at the distribution of sites and features, and their patterns. Karma also likes experimenting with digital photography to record and analyze rock art sites. Storing the images in a computer provides a permanent record. This is important because rock art is fragile; erosion and vandalism can destroy these irreplaceable resources.

Karma is not sure if any of her job is easy, but she has the most fun doing archaeological surveys. She enjoys hiking in the mountains, looking at beautiful scenery, and working on her own. She also says it is great to work on the reservation she is from, and with Indian people on other reservations.

The most difficult part of Karma's duties is surveying when it is hot and she is tired from working all day. She would like to sit in the shade and relax, but the projects have to be completed! Sometimes report writing can be dull. She also finds that knowing and learning the many laws that apply to archaeology, and implementing them, is demanding. At times, it is difficult for Karma being a Native American and being an archaeologist. It is hard to balance what she knows is right, and how she feels as an Indian, with the established government system and policies. Those policies dealing with

land ownership and resource management are especially tough.

When asked what she believes the future holds for archaeology, Karma says: "I hope to see more integration of tribes in the field of archaeology, bridging the gap between the two. Montana archaeologists deal with many aspects of Indian peoples' ways. I think it is imperative that we be involved; after all, it is our history and culture. As we become more involved, some stereotypes Native Americans have concerning archaeology are changing. New, positive ideas about archaeology are appearing. It is good to see."

Karma suggests studying the sciences of geology and biology, as well as English and writing if you are interested in archaeology. Archaeology requires a lot of report writing, and being understandable is very important. Knowledge of math is also helpful. Archaeologists must know the history and geography of a region before they can understand its people and their societies.

Her message to you is: "We are all rich in history and culture; it makes us who we are. Archaeology and the study of human culture in Montana gives us a greater understanding and appreciation of our early ancestors. It teaches us about their ability to overcome seemingly insurmountable odds, and about their perseverance. Because of our ancestors, we are here and have developed into who we are. Be proud of your own, and others', history. It is all special and in some way sacred. Preserve and protect all cultures.

"Sure, archaeology is a science, and scientific information is wonderful. But archaeology is the study of real humans and cultures that existed in the past. It is about people. Be respectful in dealing with cultural resources and learn what you can. As I was told, this connection between heart and mind is vital, not just in your work, but to you as a person."

In her free time, Karma enjoys camping, reading, and especially fishing. Her catch of the season was a ten-pound, twenty-two-inch walleye, at Cooney Dam.

Karma Cochran is an archaeologist who studies Montana's ancient people. She is also an enrolled member of the Gros Ventre Tribe.

Amazing Montanans

Ann M. Johnson is an archaeologist who studies ancient technology.

Dr. Ann M. Johnson is an archaeologist who studies ancient technology—the manufacture and use of material objects needed in daily life by people of the past. Ann's specialty is the study of prehistoric pottery, or ceramics, of the Northern Plains. When Ann was in graduate school, Montana prehistoric ceramics was an area no other student was studying, and she found the opportunity to make a contribution in the study of prehistoric ceramics attractive. The first Northern Plains prehistoric pottery found by archaeologists dates from about A.D. 400.

Ann directs her research at a range of cultures, from the group of prehistoric people just before pottery appeared, 1000 B.C., to the people at the beginning of the historic period. She also studies historic Native American sites so that she can more fully interpret the past.

When Ann studies pottery, she is first interested in the technology of a piece. She seeks clues about how it was made, where the clay was obtained, and how the pot was decorated. Then she focuses on the group of prehistoric people who made this particular type of pottery. Pottery tends to be culturally characteristic, that is, pots have qualities that help identify different prehistoric groups.

Ann states that the best way to study pottery is to examine it in person, and to look at a great deal of it. Pictures and words do not fully convey the qualities that distinguish cultures and time periods. Someone who analyzes pottery—a ceramic analyst—also needs to keep good records and notes on the collections she has viewed. Similarities and differences in pottery translate into similarities and differences in cultures. Records and notes are then used to compare to collections viewed at a later time.

Ann was interested in archaeology at a young age and did her first fieldwork when she was eleven. She joined a field crew testing prehistoric sites near Havre, Montana. Ann attended elementary and secondary schools in Kalispell, Montana. Her post-secondary education was at the University of Montana and the University of Missouri. While in graduate school, she published her first archaeological article and worked on archaeological inventory and testing crews.

Ann spent a couple years working with the Colorado State Archaeologist's Office and the Bureau of Land Management. She joined the National Park Service in 1980, and she has been the archaeologist for Yellowstone National Park since 1995. She says that the easiest part of her job is getting up and going to work, because she loves where she works and what she does! Ann says the most difficult part of her job is finding time to write articles presenting the information she has learned from her investigations. Her other work, with deadlines to meet, often takes priority over her writing.

As she studies the past, Ann is most intrigued by the relationships between the groups of people who inhabited the plains. There were two contrasting prehistoric lifestyles. One group were migratory, having no permanent home. They moved seasonally, gathering plant foods and hunting animals, primarily bison. The other group were villagers, who had permanent homes. They cultivated gardens with corn, beans, squash, and sunflowers, and they supplemented their agricultural products with summer hunts. These summer hunts would bring villagers west from the Dakotas to the eastern Montana plains, where the non-village groups lived. When evidence of contact between the two groups exists, their encounters were sometimes peaceful, and sometimes they were not.

Ann notes that the villagers made large numbers of excellent ceramics, while the non-village groups only occasionally made a few pots. Working for the National Park Service has given her the opportunity to study two sites in Yellowstone National Park known to contain prehistoric ceramics. These ceramics are identified as Intermountain ware and are found in Montana, Wyoming, and Idaho. Both Yellowstone ceramic sites are believed to represent prehistoric Shoshone Indians, a non-village people.

One of Ann's favorite Montana sites is Wahkpa Chu'gn, near Havre, where she did her first fieldwork. It is a large buffalo jump with processing areas and camp areas. Wahkpa Chu'gn was used from about A.D. 400 to 1600 by a series of different peoples. It has never been vandalized, making it a valuable archaeological site. It also contains all the activities associated with the buffalo jump, allowing archaeologists to interpret the entire picture of how early people lived. The Wahkpa Chu'gn site is open to the public to visit.

Another of Ann's favorite sites is Nollmeyer, a village near Sidney, Montana. People at Nollmeyer moved from northern South Dakota to eastern Montana and built earth homes. They left behind many tools, pottery, and animal bones from their meals. These people also built a fortification ditch around their village. It must have been because their migratory neighbors were not friendly!

Ann has worked at sites in North and South Dakota, Montana, Colorado, Wyoming, and Missouri. An extensive project she worked on was in the mountain foothills outside of Denver, Colorado. During this project, Ann and her co-workers documented seven thousand years of prehistory with a series of rock shelter tests. Ann has also worked at sites in Saskatchewan, Canada, and Colombia, South America.

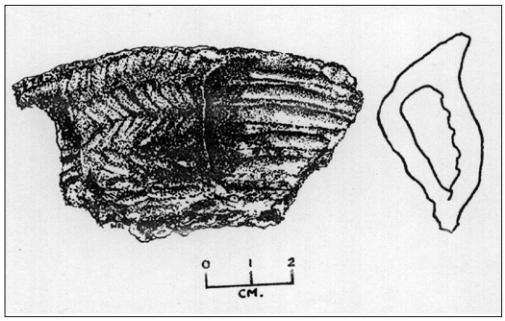
Ann would most like to find a Montana kiln site, a location where prehistoric pottery was fired to change it from dried clay to ceramics. If such a site were carefully excavated, much could be learned about how non-village people made pottery. She would study similarities and differences to the way village people made their pottery.

Ann says that thousands of sites are destroyed by development, erosion, and vandalism each day. Thus, the total number of sites is decreasing. She believes that, in the future, archaeologists will investigate more sites through the use and reanalysis of museum collections.

Ann states that archaeologists should know a little about many subjects. If you are interested in the field of archaeology, it is helpful to have knowledge of botany and animal anatomy to identify plants and bones. Geography and geology assist in understanding the location of sites and stones used as tools. Math, statistics, biology, ecology, history, physics, earth science, and chemistry are essential courses. It is important to be able to read and write well. Computer skills are valuable. Students should also learn about the scientific method of how to formulate and test hypotheses.

Ann's message—as you learn more about archaeology—is: "Please remember that knowing where artifacts come from, the site and the location within the site, is very important to the proper interpretation of those artifacts."

When Ann is not studying pottery, she enjoys gardening and photography. Her family includes two sisters, a lawyer and a medical doctor.



Prehistoric pottery is not an artifact commonly found in Montana. When it does appear, it often reflects long-distance travel or trade between ancient groups. After studying this piece of pottery from Meagher County—a rim shard with a handle—Ann Johnson concluded that it is most like pottery from the Middle Missouri area of South Dakota made between A.D. 1450 and A.D. 1700.

Since 1995, Ann Johnson has been the archaeologist for Yellowstone National Park. Ann began her career with the National Park Service in 1980.

Amazing Montanans

Troy Helmick is an archaeologist who studies ancient technology.

Troy Helmick is an archaeologist who studies ancient technology—the manufacture and use of material objects needed in daily life by people of the past. Troy grew up in central West Virginia, an area rich in historic and prehistoric sites. His interest in archaeology developed as he listened to his uncle tell Civil War stories and of finding "arrowheads" in cornfields. His fascination continued when he moved to Montana as a young adult. Troy then had the opportunity to discover Montana's many archaeological sites and features.

Troy was curious to know more about ancient stone tools and weapons. He wanted to contribute correct information about lithics—objects made of stone by ancient people. He began flint knapping to understand the techniques and technology involved in creating those tools and weapons. He also studied the atlatl, a weapon used more than nine thousand years ago in North America. The atlatl is composed of a throwing board used to launch a long dart tipped with a projectile point. The atlatl was used until the bow and arrow replaced it as the preferred hunting weapon, about two thousand years ago.

Troy is an amateur archaeologist, working in the field out of personal interest rather than as a profession. He has made some important contributions with his experience. He has authored an article on atlatl weights found in Montana. These are stone artifacts and are the most commonly recovered pieces of an atlatl system besides the projectile point tips. Archaeologists have many ideas about the weight's function. They test their theories by replicating the weapon and using it. No clear role of the weight has yet been determined. What archaeologists do know is that ancient atlatl hunters could effectively hit a target.

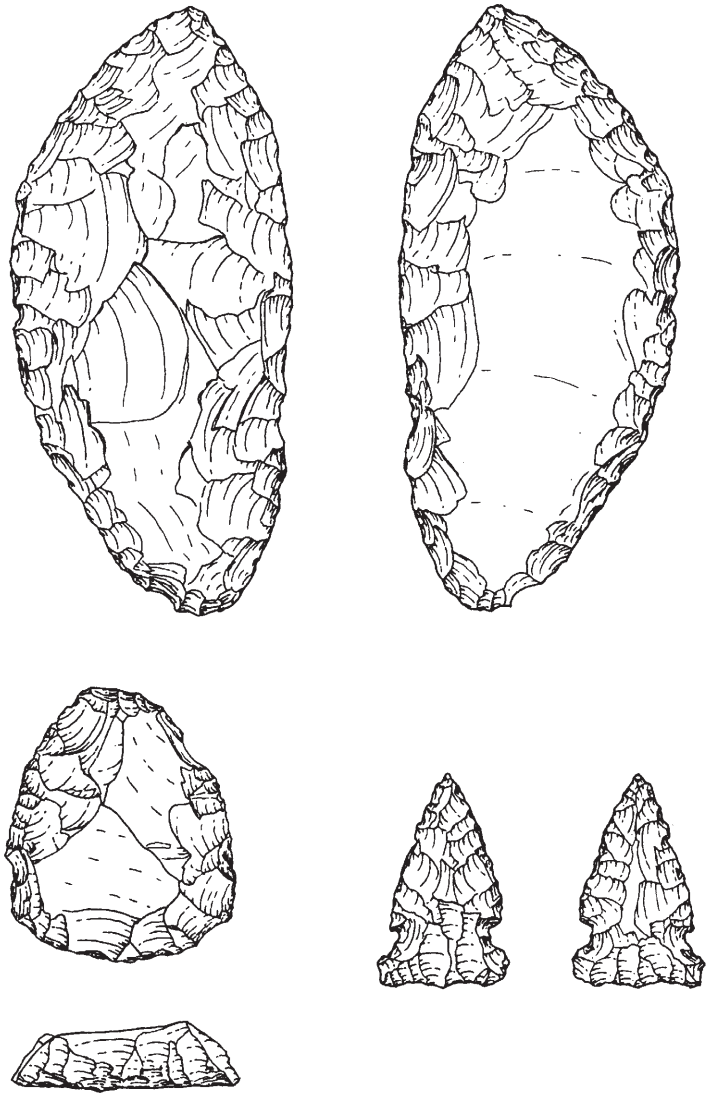
Archaeological interest in atlatls has led to competitions, both for research and fun. Troy participates in these atlatl competitions. He reports that the current world record distance for an atlatl-thrown dart is 258.6 meters!

Troy enjoys studying prehistoric archaeology because there are so many unanswered questions. It is very easy for him to stay interested in his search for answers. He says that the most difficult part of his work in archaeology is finding time to do everything he would like to accomplish.

Troy's favorite location is Canyon Ferry Lake, near Helena. He has spent more than thirty years studying sites along the lakebed. More than four thousand artifacts from these sites have been catalogued. They represent ten thousand years of habitation! He feels that the importance of these finds is yet to be recognized and determined.

Troy has worked on many archaeological projects throughout Montana. He has done research for the Montana

Troy Helmick draws scientific illustrations of artifacts for archaeologists. These detailed drawings help to show how an artifact was made. Here are three of Troy's drawings: a stone knife, an end-scraper, and a projectile point. *Courtesy Montana Historical Society.*

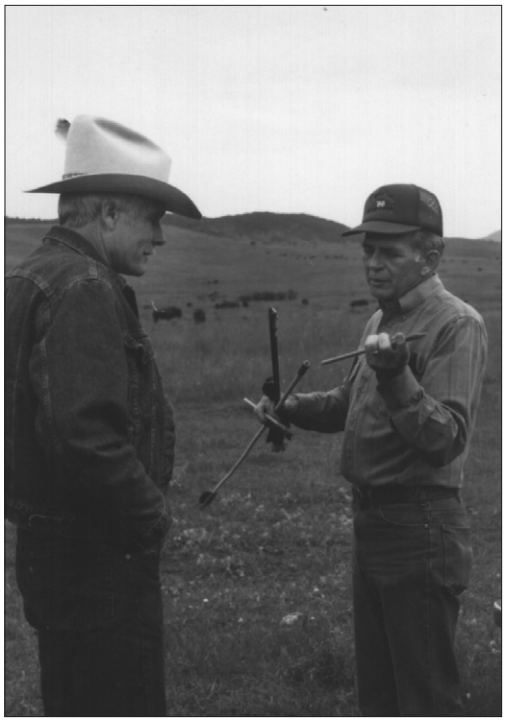


Historical Society Preservation Office, Helena, and worked on the Flying D Ranch Survey, Madison County. He has surveyed sites and worked as an archaeological aide for Dr. Leslie B. Davis of the Museum of the Rockies, Bozeman, and for Aaberg Cultural Research Consulting Service. The locations he has worked include Sheep Rock Springs, Steels Pass, Barton Gulch, Bowman Springs, Lindsay Mammoth, Indian Creek, McHaffie, Dry Creek, KXGN, Bear Paw Springs, Merrel, and Mann Gulch.

Troy has carried out a variety of archaeological tasks working at those locations. He has located, identified, marked, and recorded artifacts, features, and sites. He has drafted cross-section and profile maps, as well as vicinity and location maps. Other work he has performed includes topographic surveys, horizontal and vertical grid layouts, sorting screened matrix to recover cultural materials, and writing reports. In addition, he has drawn ink illustrations of stone and bone artifacts to include in site

reports. His illustrations have appeared in numerous archaeology reports.

When Troy is not involved in archaeological activities, he spends time with his family. Troy and his wife, Shirley, live in Townsend, Montana. Their six children are Rhonda in West Virginia, Leslie Ann of Billings, Coleene living in Virginia, Charmon in nearby Helena, Brent in Naples, Italy, and Dean in California. Troy and Shirley have ten grandchildren! Hunting, fishing, photography, Lewis and Clark—and of course atlatl competitions and flint knapping—are among Troy's hobbies.



Troy Helmick is a nationally recognized marksman in the use of the atlatl weapon system. Here he demonstrates the pieces of the atlatl to Ted Turner on the Flying D Ranch outside Bozeman, Montana. *Mark Baumler, photographer. Courtesy Montana Historical Society.*

Arch Journals

Before they begin to work on a theme, students should create an **Arch(aeology) Journal** so they can keep most of their written material in one location. Then they will be able to refer back to information they learned in previous lessons. And they may want to use the information they've collected in their journals for a culminating activity, such as a book or mural. By reviewing each journal, the teacher is able to assess and evaluate student learning in targeted areas.

Following are four different possible formats for your students' Arch Journals:

- spiral notebook
- loose-leaf paper, with construction paper cover, stapled together
- accordion "book"
- unlined paper folded in half

To choose the most appropriate Arch Journal format, determine how many of these lessons you will be presenting to your class.

Narratives

Each narrative in this curriculum is written to be used by students as hands-on reading material. The writing targets upper intermediate readers. Each narrative contains an opening paragraph designed to help students connect their own experience with the theme and lesson. The narrative then provides background information relating to the lesson question. The narrative may be used before or after the Arch Activity, based on your delivery strategy.

The way you approach each reading lesson should match your teaching style and the needs of your students. Each narrative may be used with the whole group, small groups, or individual students. As students read a narrative, you can have them focus on specific reading and writing skill areas from your curriculum. You may also assign narratives within a theme to groups of students for reading, summarizing, and reporting to the class. Always plan before making a reading assignment.

Vocabulary

The vocabulary words in each narrative are identified in bold. All vocabulary within a narrative is listed on a separate page that immediately follows the narrative. A **Glossary for Teachers** at the end of the curriculum defines some of the vocabulary words. For a complete glossary, see Ancient Teachings Glossary for Teachers, in the Ancient Teachings binder or on the web at http://mhs.mt.gov/shpo/archaeology/ancientteachings.asp. Your students should do their best to define each vocabulary word on their own, deriving the meaning from the narrative itself and from readily available reference works—especially dictionaries aimed at their grade and reading levels.

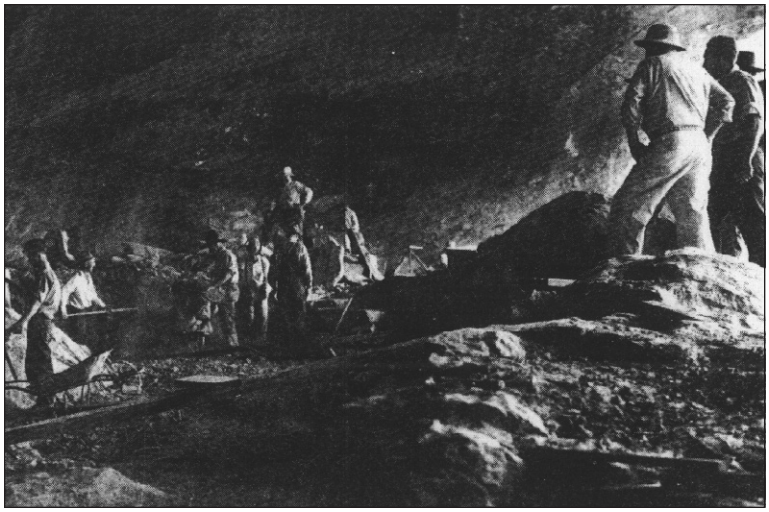
Use the vocabulary to teach specific skills and language development. You can use the vocabulary words to teach pronunciation, syllabication, definition in context, and sentence writing. Review your curriculum needs to design your vocabulary lesson. Students may do the entire list, or break into groups to share the list.

Lesson 1—Narrative: What Is Archaeology?

Archaeology is the study of the past through artifacts, ecofacts, and features.

If you have ever moved from one home to another, you know that you and your family left behind broken toys, outgrown clothing, and other belongings that you no longer found useful. Imagine that the next people who moved into your old house found the things you left behind. Those people could then learn something about you, and your daily life, by studying the objects you discarded. They could learn about your **technology**, or the tools you used. They could learn how you managed to stay alive, or **subsist**, by studying the foods you ate. And they could study your **shelter,** or home, and the protection it gave you.

Scientists today study technology, subsistence, and shelter of people from the past. This study of the tools, foods, and homes from former times is called **archaeology**. Archaeology is the process of discovering, interpreting, and preserving the past. The scientist who conducts these studies is called an **archaeologist**. Archaeologists create stories of the past through careful research. First, they find items at a specific place. Next they carefully describe those items and may take them to a laboratory. In the laboratory, the archaeologists study and analyze the items they have discovered. From this study and analysis, archaeologists can then determine a story of the past. The story will tell of the lives, movements, and survival of people, either **recent** or **ancient,** and describe their way of life. Ancient means very long ago, from the far distant past. Recent refers to modern times.



The excavations at Pictograph Cave, south of Billings, in the late 1930s and early 1940s, were the beginning of scientific archaeology in Montana. *Spencer Lauson, photographer. Courtesy Montana Historical Society Photograph Archives.*

Archaeologists search for **artifacts**. Artifacts are the objects that people have made or used. An artifact may be a stone tool of long ago, or broken glass from the more recent past.

In addition to artifacts, archaeologists search for and study **ecofacts** and **features**. Ecofacts are items from nature that provide clues to the past. Seeds or animal bones found in a fire pit are ecofacts. Features are non-movable things that indicate that humans have been present in a certain place. An example of a feature is soil that is discolored or stained by bacteria and mold, where a wooden post rotted in the ground. A feature may also be a place where people spent time, like a tipi ring or a fire pit. Artifacts, ecofacts, and features present definite clues that help an archaeologist re-create the past.

People left artifacts, ecofacts, and features behind at the **sites**, or

locations, where they lived. Ancient Montanans did not have homes like ours. Their homes may have been caves, rock overhangs, or structures made of timbers and animal skins. Their homes could be either temporary or permanent, depending on whether food was available. Ancient people did not shop at grocery stores. Instead they were **nomadic**, moving as the seasons changed to hunt and gather plants in different places. The items they left behind when they moved were eventually buried by soil and dust. The discoveries made at ancient sites provide clues as archaeologists attempt to understand the past.

A Montana archaeologist might study and research an ancient campfire pit for clues to the past. The site may contain ecofacts like animal bones and pieces of stone tools. These are ordinary items from the lives of ordinary people. Thrown away or dropped when they were no longer useful, and sometimes lost, they are the garbage of the past. Ancient garbage is called a **midden**. Middens provide many objects for archaeologists to study.

An archaeologist thoroughly researches the information presented by artifacts, ecofacts, and features. Then the scientist creates an idea, or **theory**, that explains the daily life of early Montanans. Interpreting an object's use and function may be difficult. Because of this, not all archaeologists reach the same conclusions about what an artifact was used for or what an ecofact or feature means. As a result, different archaeologists come up with different theories about the nature of past life. Future discoveries and advancements in research methods may challenge our current theories.

Montanans of long ago were the ancient **ancestors** of today's American Indians. The most ancient of Indian groups on North America are named **Paleoindian** people. Paleoindians lived more than 8,000 years ago. They lived in Montana during the end of the last Ice Age. Paleoindian artifacts indicate that these people hunted some animals that no longer exist. After the Paleoindians, the next group of ancient people are called **Archaic** people. They lived in Montana between 8,000 to 2,000 years ago. Archaic artifacts indicate that these people made use of more plants and animals than Paleoindians did. The most recent ancestors of today's Indians are the **Late Prehistoric** and **Protohistoric** peoples. These groups lived much like Archaic people, except that they depended more on the bison to survive. The most recent ancestors of today's Indians introduced the bow and arrow as a weapon, and they later used horses for transportation and travel.

Archaeology is often very puzzling and mysterious. And the intrigue of the past attracts people to the study of archaeology. Finding missing pieces of the past's puzzle—and solving the mysteries of ancient life—makes being an archaeologist rewarding.

Lesson 1—Vocabulary: What Is Archaeology?

ancestor _____

ancient _____

archaeologist _____

archaeology _____

Archaic _____

artifact _____

ecofact _____

feature _____

Late Prehistoric _____

midden _____

nomadic _____

Paleoindian _____

Protohistoric _____

recent _____

shelter _____

site _____

Lesson 1—Vocabulary: What Is Archaeology? (continued)

subsist _____

_____

technology _____

_____

theory _____

_____

Lesson 1—Arch Activity: The Mystery of the Missing Pages

Grades: 3–8
Time: 30–45 minutes
Content Area: science, writing, and reading
Who: whole class and small group

Materials:
- **mystery book—30 to 40 pages**
- **worksheet—12 copies**
- **pencils and coloring tools**
- **Arch Journal**

Objective and Outcome

- Students will gain an understanding of how an archaeologist uses clues to determine the past.
- Students will reconstruct a book by creating the missing pages. Then they will compare their work to that of an archaeologist.

Activity

1. Select a disposable story book (30–40 pages). Tear apart into individual pages. Divide book into 6 equal groups and remove 1 or 2 pages of text from each group.

2. Divide class into 6 equal groups. Instruct each group to choose a writer, an illustrator, a reader, and a materials manager. The materials manager hands out book pages in sequence, and 1 or 2 worksheets to each group. Each person needs at least 1 page.

3. Inform students the book is incomplete. Instruct groups to order the pages chronologically. Each student then reads his or her page(s) aloud in the group. The group's task is to study the available information and create the missing story on the worksheet (writer and illustrator). Allow 10–15 minutes.

4. Return to whole class. Each reader shares his or her group's part of the story in order, including their re-creation of the missing pages.

5. Discuss: How did each group determine the missing pages? What factors entered into the re-creation? What changes would a group make upon hearing the remainder of the book from other groups? How is their assignment similar to an archaeologist's work? Why are they both mysteries?

6. Show students the missing pages and read the missing text.

7. Share ideas with the class and discuss.

Extensions

3–5:

- Research vocabulary.

See: Lesson 1A—Vocabulary

6–8:

- Challenge students to read about archaeological sites and to locate them on a map. *See:* Montana Archaeology Education Resource Catalog: Student Reading List (full citation in Bibliography).

Lesson 1—Arch Activity: Student Worksheet for "The Mystery of the Missing Pages"

(2 per 6 groups)

Each group member reads his or her portion of the story aloud. Discuss the missing pages. Determine the group's plan for the missing pages. Write and illustrate the missing pages. Prepare to share your ideas with the class.

Missing Page #_____

Lesson 2—Narrative: What Is Ancient Stone Technology?

Stone technology uses raw materials to provide tools for daily survival.

Technology is the manufacture and use of tools to cope with daily life. Today, technology includes everything from kitchen knives to computers. It includes the processing and packaging of foods in our grocery stores. It is responsible for our society's ability to land a spacecraft on Mars. Tools make our lives easier, more efficient, and better.

In the prehistoric past, tools gave people the ability to survive, just as they do today. Their needs for food, shelter, safety, and expression were exactly the same as ours. But past technology relied on raw materials that are quite different from those commonly used in our modern world.

Ancient technology depended heavily upon the use of **stone**. Stone is an **inorganic** material that survives in soil for thousands of years. Stone tools are found in archaeological sites throughout the world, including Montana. Tools made of stone are the most common kind of artifacts studied by archaeologists. The word **lithic** (from the Greek word *lithos*) refers to objects made of stone, as in **Paleolithic**, the Old Stone Age.

The earliest known stone tools in the world were **pebble tools**. They were made by very primitive humans in Africa some two million years ago. They are intentionally broken rocks with edges that indicate that they were used as tools. These early humans used pebble tools for crushing animal bones. About five hundred thousand years ago, more advanced human groups in Europe and Asia depended on the stone **hand-axe**. One end of the hand-axe was shaped into a point. It was used in hunting, food preparation, and many other tasks. Later, prehistoric people made more refined stone **blade and core** tools, in which long, narrow flakes (blades) were created from a prepared piece of lithic raw material (core). The earliest prehistoric groups who migrated to North America and Montana brought this sophisticated **stone tool technology** with them.

This large block of black basalt shows evidence of percussion flaking. It comes from a prehistoric quarry near McAllister in southwestern Montana. *Courtesy Montana Archaeological Society.*

The earliest Montana stone tools are about twelve thousand years old. They are beautiful **spear points.** Stone tool use continued here until about two hundred years ago. Great skill was required to make stone tools. Ancient people selected special kinds of stone that were easy to work, but kept a sharp edge. **Chert** (sometimes referred to as "chalcedony," "flint," or "agate") is such a stone. Raw chert comes in a variety of colors—brown, yellow, red, green, and even blue. A useful quality of chert is that even-sized flakes can be removed from it—in a controlled manner—by carefully striking its edge with another rock or piece of antler. Prehistoric people sometimes baked or heated chert in fire pits dug into the ground. This process of **heat treatment** drew out the water in the rock and made it easier to work. **Obsidian, basalt**, and

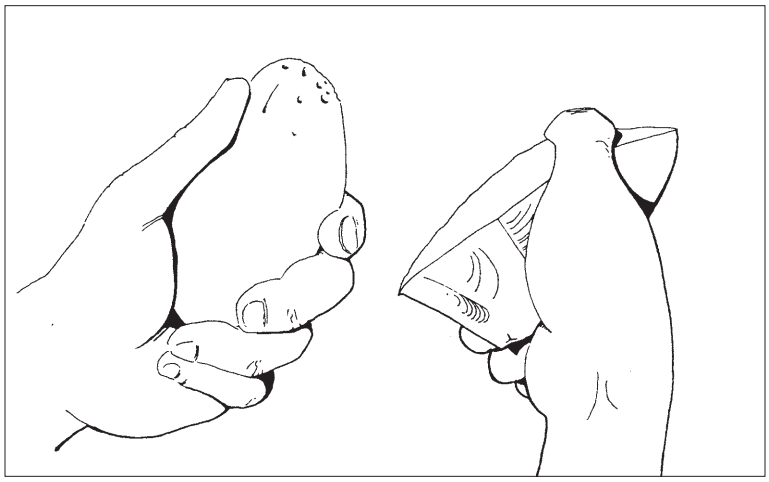
porcelanite are other types of stone used by prehistoric people in Montana. Obsidian and basalt are volcanic in origin and are usually black in color.

Many kinds of raw **toolstone** are found throughout Montana. A **quarry** is a specific place where people obtained this toolstone. Prehistoric people often traveled great distances to collect particular kinds of toolstone. One of the places they got obsidian, for example, was Obsidian Cliff in Yellowstone National Park. But these early people also gathered other toolstone, especially chert, on mountainsides and in riverbeds wherever they encountered it in Montana.

The crafting of stone tools by carefully removing pieces of material is called **knapping**, or sometimes "flint knapping" (even though other stones besides flint were used). Prehistoric people used a fist-sized rock called a **hammerstone** to craft raw stone into tools. With a hammerstone or large piece of antler, prehistoric **flint knappers** carefully chipped away excess material like modern-day sculptors. This is called **percussion flaking.** It gave a rough shape to the tool. Then the flint knappers used antler tools in **pressure flaking** the stone into a finished, sharp tool. If a piece of flint broke in the wrong place while being worked, it was either reworked or discarded. Archaeologists find waste flakes or "chips" at sites where ancient people knapped stone. Many primitive-looking tools found near quarries were probably made by children or adults who were just learning to make stone tools.

Some stone tools were designed specifically for hunting, butchering, hide working, or cutting. Others served multiple purposes. Unshaped flakes of chert and obsidian were often used for a single task, and then discarded. Hunting weapons required stone **projectile points,** often called "arrowheads." Stone projectile points were **hafted**, or tied with **sinew**, onto a wooden shaft. The earliest people in Montana used **spear points** from twelve thousand to nine thousand years ago. These hunters needed to get very close to animals in order to kill them with a spear. Some archeological sites with very old spear points have been found in Montana. These include the Anzick Site near Wilsall, the Mill Iron Site near Broadus, and the McHaffie Site near Helena.

About nine thousand years ago, Montana's prehistoric groups began to use the **atlatl**, or dart thrower, to throw long narrow darts tipped with projectile points. The atlatl featured a wooden throwing board in which the dart was placed. Throwing an atlatl was like swinging a tennis racket over one's head and propelling the dart at a target. A hunter had to stand and put his entire body into motion to propel the dart. Because it had a much greater range than earlier weapons, the atlatl allowed

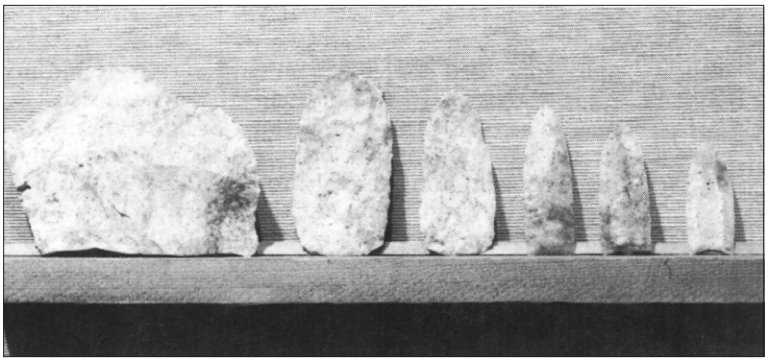


"Knapping" is the process of making stone tools by flaking special kinds of rocks. Percussion flaking involves using a hammerstone (left hand) to strike a block of stone that can be chipped, sometimes called a "core" (right hand). *Courtesy Kootenai National Forest.*

hunters to distance themselves from their prey, making hunting much safer. Parts of atlatls have been found in a few cave sites in Montana, but usually only the stone tips have been preserved. Prehistoric people made stone atlatl projectile points of many shapes. Some styles relate to particular time periods. Depending on the style or styles found at a particular site, archaeologists can then estimate the site's age and **chronology**—its placement in time. Today, atlatl enthusiasts hold contests to test their skill using this ancient weapon.

Prehistoric people in Montana used the atlatl until about two thousand years ago. Then the **bow and arrow** (using true "arrowheads") replaced it as the preferred hunting weapon. The bow and arrow had advantages over the atlatl. This new weapon could shoot longer distances with greater accuracy. And it required less movement by the hunter, making it less likely that the animals being hunted would be startled and run away. Montana Indians continued to use the bow and arrow until the late 1800s, even after guns were introduced.

Most projectile points and other stone tools that people find today were not lost by prehistoric people. They were thrown away and replaced when they were no longer usable. Projectile points were used like pencils are today. When a pencil point breaks, it is not thrown away. It is resharpened and used again and again. Ancient hunters also resharpened and reshaped their points until they were beyond repair. Only then did they throw the points away.



How to make a projectile point: Select a piece of chert, obsidian, or any other fine-grained stone that, when broken, exhibits a conchoidal fracture (a technical term meaning that it breaks just right!). Strike the stone with a harder stone to break off a large flake, or relatively flat piece like the one on the left. Then shape the flake by chipping off smaller flakes from the sides and surfaces with a rock, a bone fragment, or an antler tip. To finish the point, chip the sides finely to create sharp edges. As a final step, Clovis points were "fluted" by popping a flake off the two faces to make a shallow channel. This point can be fastened directly to a wooden shaft with sinew (animal tendon) and natural glue. *Flint knapper, Alan Stanfill, 1987. Courtesy Montana Historical Society.*

Stone tools served many purposes. When a game animal was killed, ancient people used stone **butchering knives** and sharp flakes to cut up the animal. They used stone **scrapers** to clean animal hides. And they used **stone drills** to make holes in wood, bone, and leather. Archaeologists have many technical names for the various types of stone tools.

Because stone is an inorganic material—that is, it does not decay easily—stone artifacts are more abundant than other types of prehistoric artifacts. Remember, if you find an artifact, it is best to leave it in place. If you find an artifact on public land that you think an archaeologist should know about, call your local Forest Service or Bureau of Land Management office, or the State Historic Preservation Office (SHPO) in Helena. Professional archaeologists who work for these organizations study and protect ancient sites.

Lesson 2—Narrative: What Non-stone Materials Were Used for Ancient Technology?

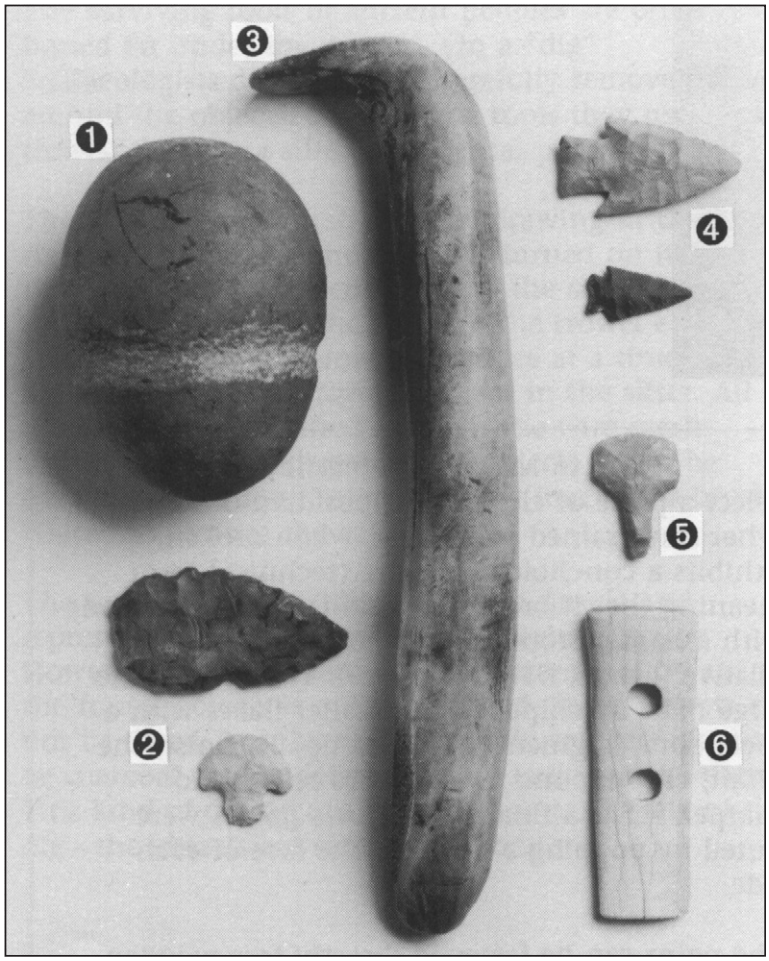
Bone, antler, and shell were non-stone materials used for ancient technology.

Do you ever wonder how people of the past made their clothes without steel needles, thread, or a sewing machine? Ancient people manufactured their clothing, moccasins, containers, and tipi coverings with **bone needles** and **awls**. They used their awls, which were about the size of a modern embroidery needle, to pierce holes in animal hides. Their bone needles, about the size of toothpicks, had a tiny hole in one end just like modern sewing needles. They used **sinew**—animal tendons—and plant twine as thread. One container ancient people made was a **parfleche.** A parfleche was a hide container for storing dried food, clothing, and personal belongings. It was made by sewing together pieces of animal hide, especially from bison.

Ancient people used the fibers of sagebrush, cedar, yucca, and other plants to make string and **cordage.** They used cordage in many ways, just like a modern ball of string. They used it to tie things together and to make **baskets**. Archaeologists rarely find ancient string and cordage in Montana archaeological sites. Sometimes they do find small cordage and basket fragments in caves and rockshelters like Pictograph Cave near Billings in southeastern Montana.

Some ancient people made their fishhooks and fishing harpoons out of bone. These artifacts are not very common in Montana. Here, people caught fish with **nets** and **weirs.** (Weirs are fences or other enclosures set in a stream to catch fish.) Some Indian tribes—like the Blackfeet—do not like to eat much fish. The ancient people here may have shared this dietary preference. This might explain the absence of fish bones in many Montana archaeological sites.

Ancient people used shaped bone tools to butcher animals and to process hides. Bone was also the material they used to make beads for necklaces. They drilled the holes in their beads with stone drills. They carved, or **incised**,



Prehistoric people used stone and non-stone organic materials as tools for different activities. Can you guess how the bone tools (#3 and #6 in this group) were used? *Courtesy Montana Historical Society.*

Answer: #3) bone handle for a stone scraper used for working hides. #6) bone shaft straightener—wooden arrow shafts were pulled through the holes to remove curves and bends.

some beads and other bone ornaments with abstract designs. At Pictograph Cave, archaeologists have found bone gaming pieces and a small carved bone turtle **effigy**, or figure. The game pieces are believed to have been used like we use dice today.

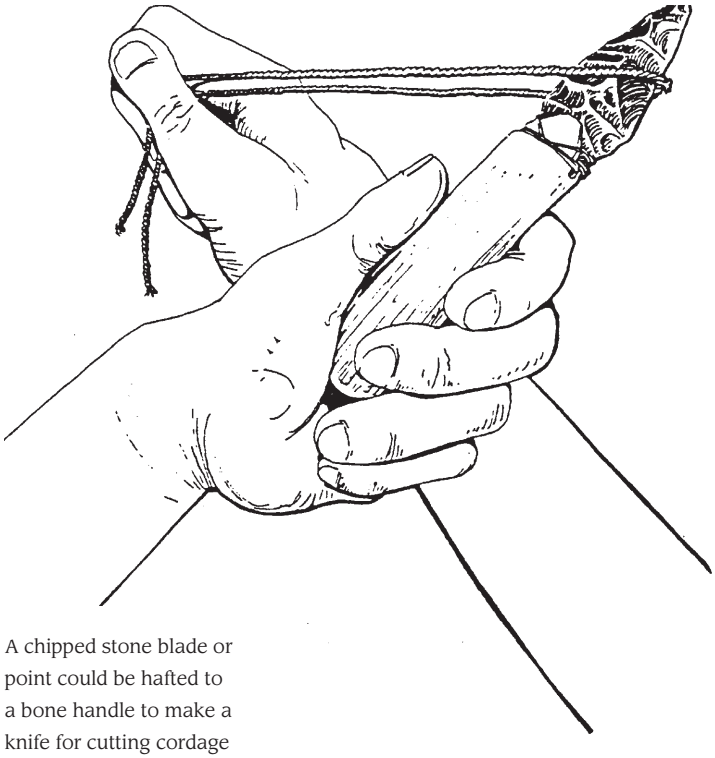
Montana's prehistoric people also used shell to make decorative items. They did not travel to the coast to get shells. Instead, they obtained them in **trade** with other tribes who lived closer to the ocean. Archaeologists have found shell beads and ornaments in Montana sites.

Ancient people used antler and horn just like they did bone. They used tools made of deer and elk antler for flint knapping, as digging sticks, and as handles for some stone tools like axes and knives. They also used ladles, spoons, bowls, and cooking tongs made of wood and bison horn.

Many of these non-stone artifacts were **perishable,** that is, they were made of **organic** materials—like plants, wood, bone, leather, and antler—that decompose quickly if exposed to air. For this reason, non-stone artifacts are rarely found in Montana. Wind, rain, snow, and the chemical agents in soil cause organic materials to decay over a period of years or tens of years. In Montana, archaeologists have mostly found non-stone artifacts in caves and rockshelters, where they are protected from the weather and do not decay as rapidly. Even so, archaeologists usually only find scraps and pieces of baskets, twine rope, and hide clothing in these sites. In museums, perishable artifacts must be kept in special, temperature-controlled display cases and storage boxes. This prevents further decay and deterioration of these organic artifacts.

Archaeologists get excited when they find leather, wood, antler, or bone artifacts preserved in the archaeological record. Sites with perishable artifacts usually give us more information than sites where only stone tools are found. Finding artifacts made of organic material provides us with a better picture of the range of technologies ancient people used. As archaeologists gain more detail about ancient daily life, they can provide a more complete story of Montana's early peoples.

This prehistoric woman uses a slender bone with a tapered tip as an "awl" to make holes in leather for sewing. *Courtesy Kootenai National Forest.*



A chipped stone blade or point could be hafted to a bone handle to make a knife for cutting cordage made of twisted plant fibers. *Courtesy Kootenai National Forest.*

Lesson 2—Vocabulary: What Is Ancient Stone Technology?

atlatl _____

basalt _____

blade and core _____

bow and arrow _____

butchering knives _____

chert _____

chronology _____

flint knapper _____

flint knapping _____

hafted _____

hammerstone _____

hand-axe _____

heat treatment _____

inorganic _____

knapping _____

lithic _____

obsidian _____

Lesson 2—Vocabulary: What Is Ancient Stone Technology? (continued)

Paleolithic _____

pebble tools _____

percussion flaking _____

porcelanite _____

pressure flaking _____

projectile points _____

quarry _____

scrapers _____

sinew _____

spear points _____

stone _____

stone drill _____

stone tool technology _____

technology _____

toolstone _____

Lesson 2—Vocabulary: What Non-stone Materials Were Used for Ancient Technology?

awl _____

baskets _____

cordage _____

effigy _____

incised _____

nets _____

organic _____

parfleche _____

perishable _____

sinew _____

trade _____

weirs _____

Lesson 2—Arch Activity: Tool Time

Grades: 3–8
Time: 50 minutes
Content Area: science, history, and writing
Who: whole class and small group

Materials:
- **Technology Tool Kit (optional)**
- **pencils**
- **draft paper**
- **Arch Journal**

Objective and Outcome

- Students will learn how ancient people used natural resources as tools to adapt to their everyday world.
- Students will examine prehistoric tools (or pictures of tools if unavailable) and will write down modern analogs to prehistoric tools.
- Students will compare the function of prehistoric tools with their modern-day counterparts.

Activity

1. If you are using the artifact replicas from the footlocker, before starting this activity, lay the artifacts out on four different tables, grouping them as follows: Artifact Group 1: hammerstone and abraiding stone (from Tray 1), antler billet and antler tine (from Tray 3), and flint knapping tools (in white bag, Tray 4); Artifact Group 2: all points in Tray 2, atlatl (from tube), and foreshaft (from blue bag, Tray 4); Artifact Group 3: stone end scraper, unretouched flake, and bifacial knife preforms (from Tray 1), antler hafted end scraper, bone handled bifacial knife, bone beamer, and bone scraper (from Tray 3); Artifact Group 4: bone awl (from Tray 3), stone awl and stone drill, bone needles, and sinew (in clear bags, Tray 4), pitch stick (in blue bag, Tray 4), and mano and matate (Tray 4).

2. Divide the class into four groups. Instruct each group to select a writer and a presenter. Pass out artifact collections (or pictures) to each group. Give each group a certain class of artifacts (i.e. one group receives flint knapping tools—Artifact Group 1; another hunting tools—Artifact Group 2; another receives butchering and hide processing tools—Artifact Group 3; and the other group manufacturing and food processing tools like drills, awls, mano and metate—Artifact Group 4).

3. Have each group look at the artifacts for 5–10 minutes and determine how they might be used. Have them write down on paper the function of the artifacts. Also have them brainstorm what tool we use today with the same function. If we don't have a tool today that compares, have them figure out why not and write it down.

4. Have groups rotate until each group has looked at all four artifact classes.

5. Have each group present their conclusions about what/how the artifacts in one of the groups were used. Also have them talk about modern analogs. Discuss.

6. Once the class discussion has ended, have students write—in their Arch Journal—their conclusions about how prehistoric tools were used and what they learned from this activity. Have

them list their conclusions by artifact classes.

Extensions

3–5:

• Research vocabulary.

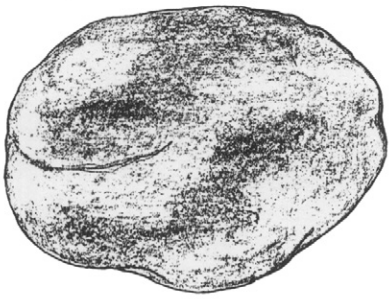
See: Lesson 3A—Vocabulary

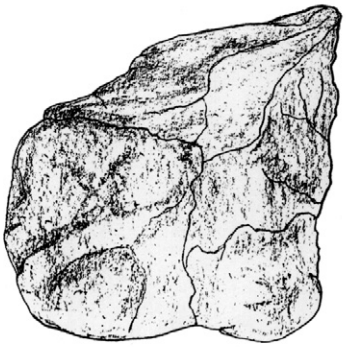
6–8:

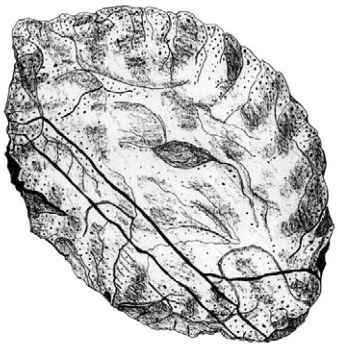
• Challenge students to place the projectile points in rough chronological order based on the information provided in the narrative. Have them determine whether the points were used with spears, atlatls, or the bow and arrow. Have them assess which technology is the oldest and which is the most recent. Challenge students to read about archaeological sites and the kinds of stone tools found at them.

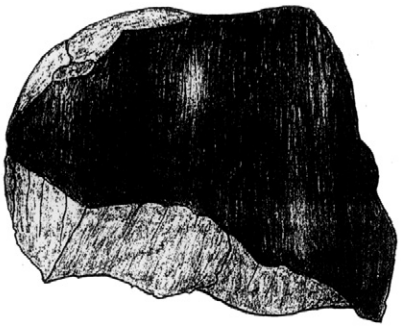
See: Montana Archaeology Education Resource Catalog: Student Reading List (full citation in Bibliography).

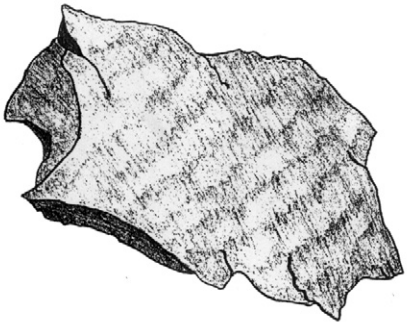
Lesson 2—Arch Activity: Tool Time
Group 1

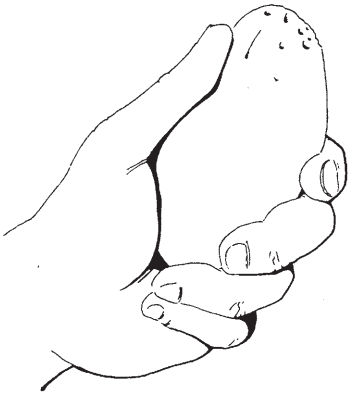


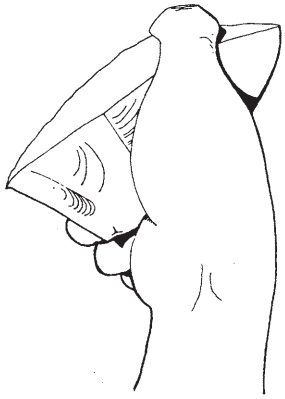




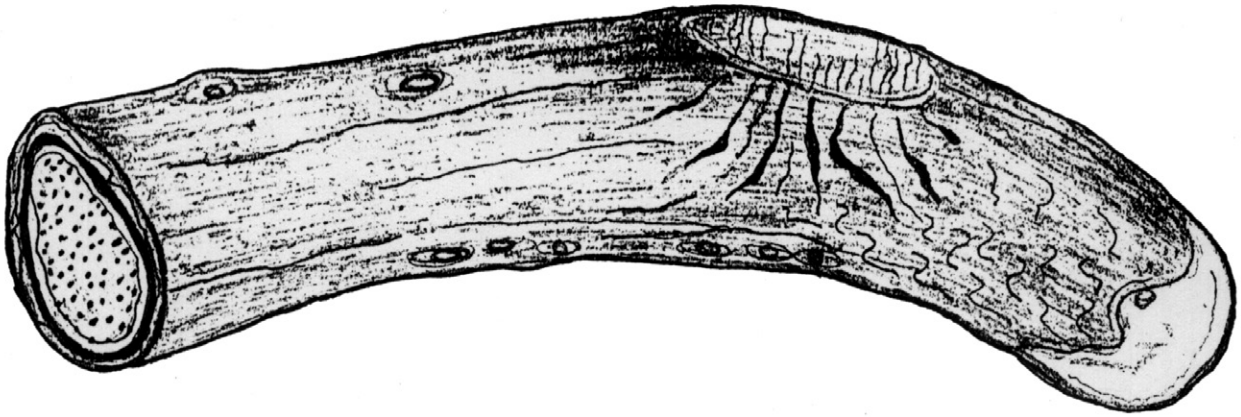


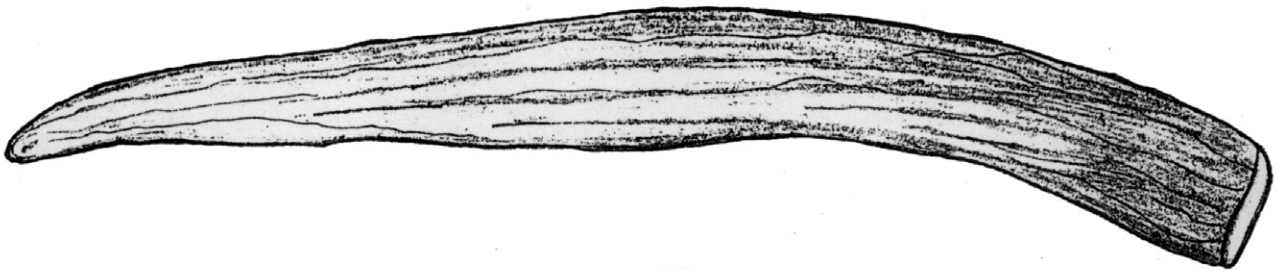


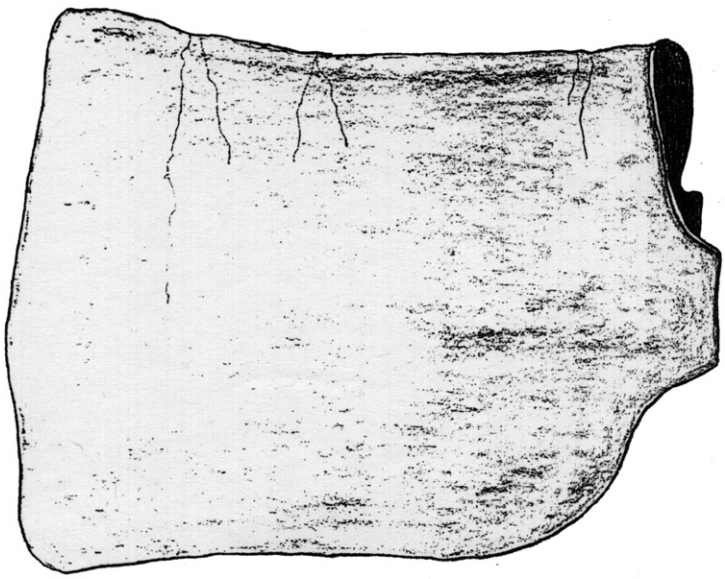


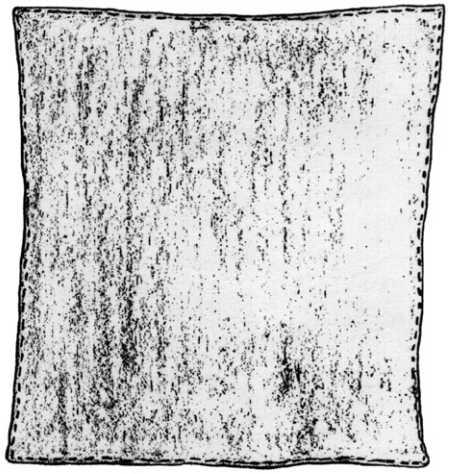


Lesson 2—Arch Activity: Tool Time
Group 1 (continued)

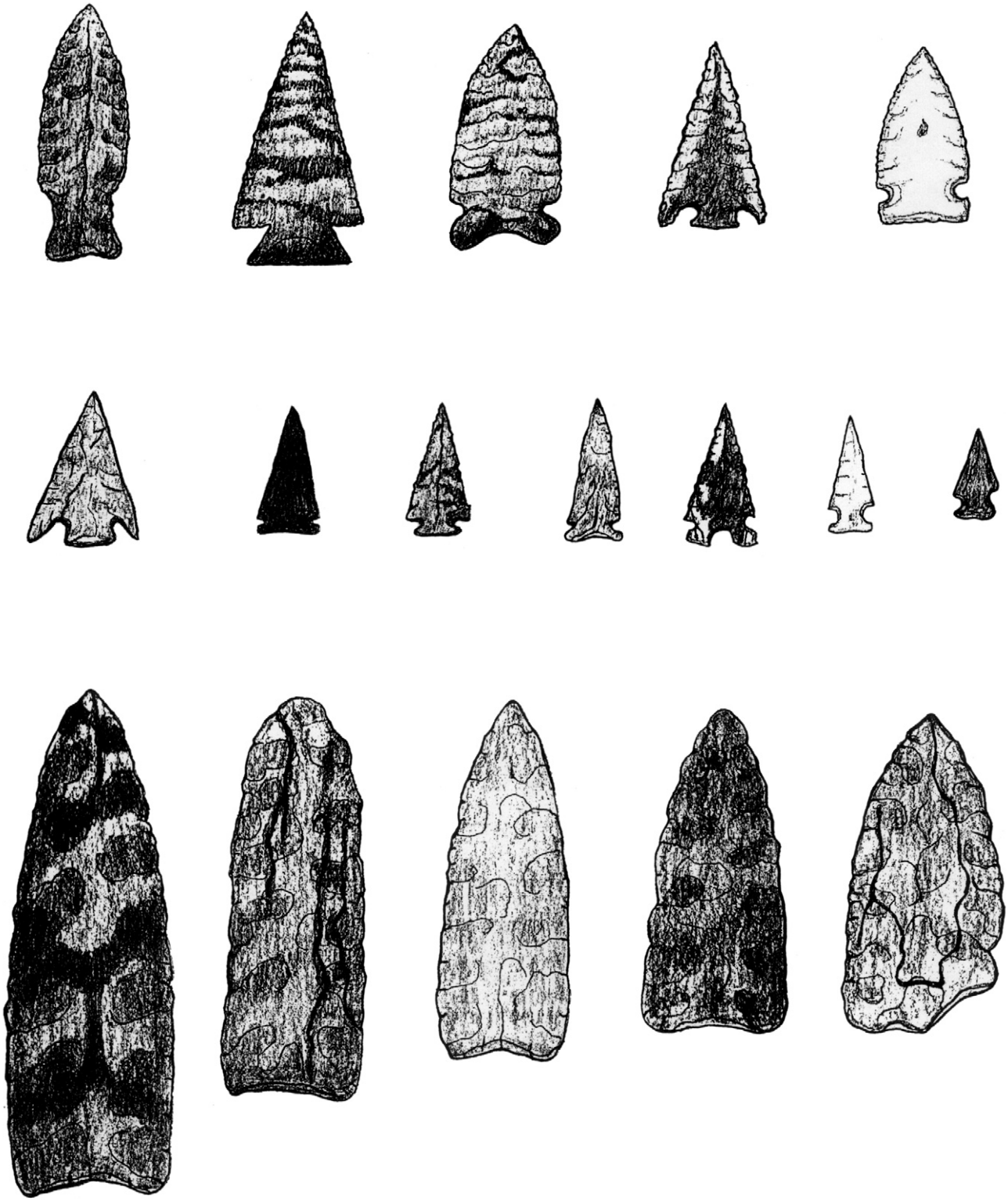






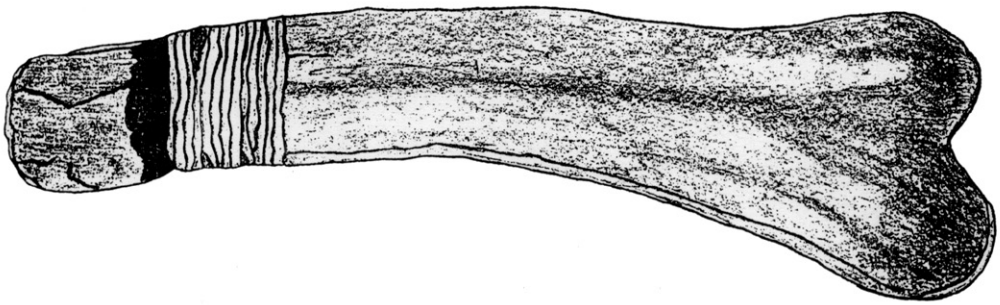


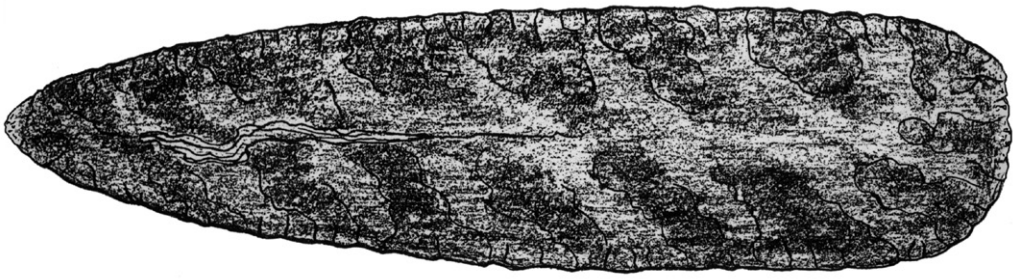
Lesson 2—Arch Activity: Tool Time
Group 2

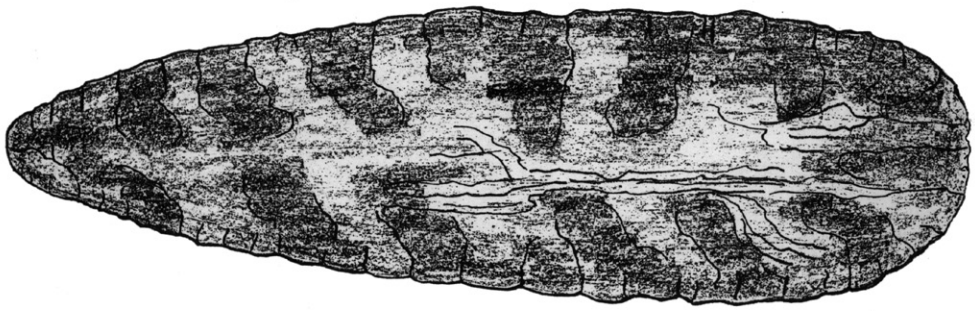


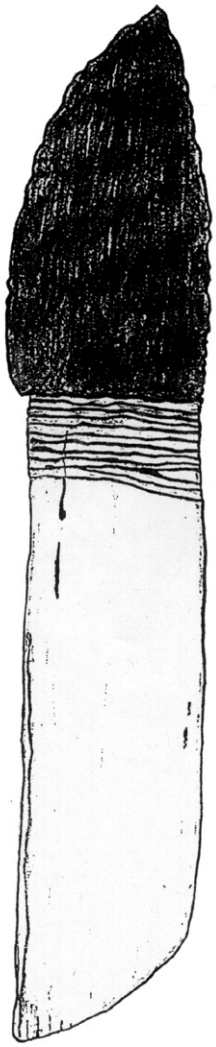
Lesson 2—Arch Activity: Tool Time
Group 2 (continued)

Lesson 2—Arch Activity: Tool Time
Group 3

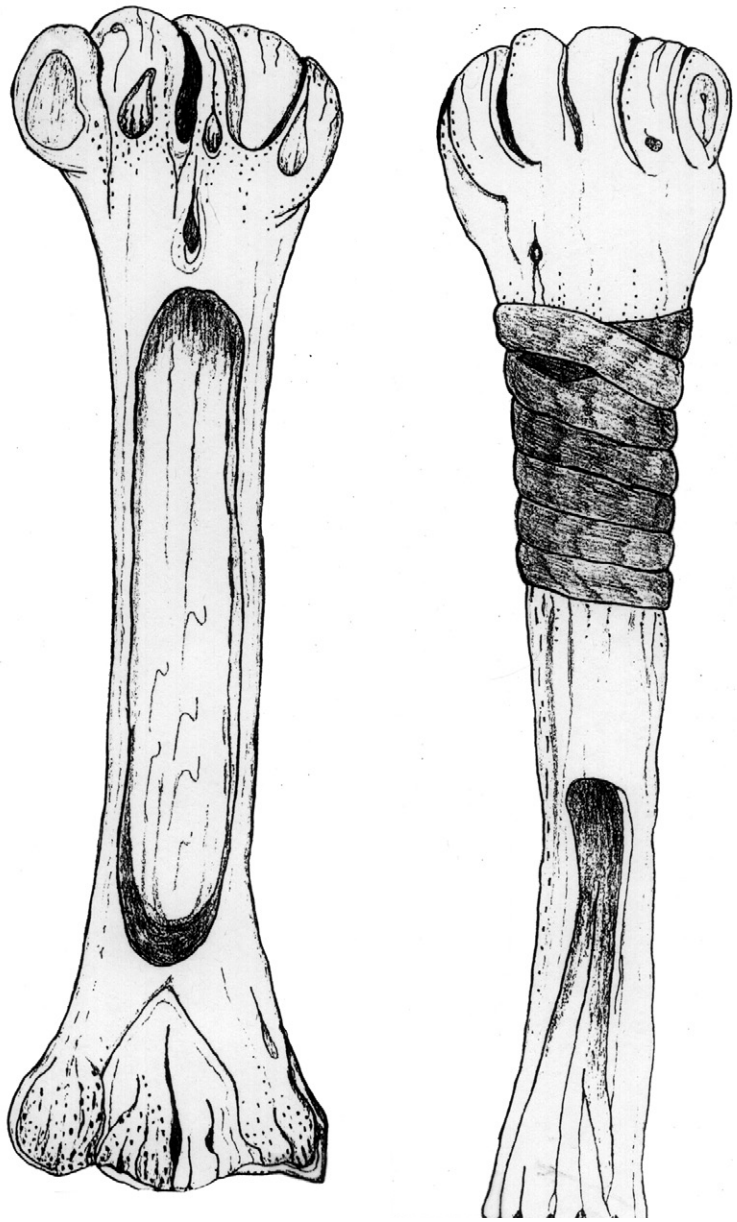




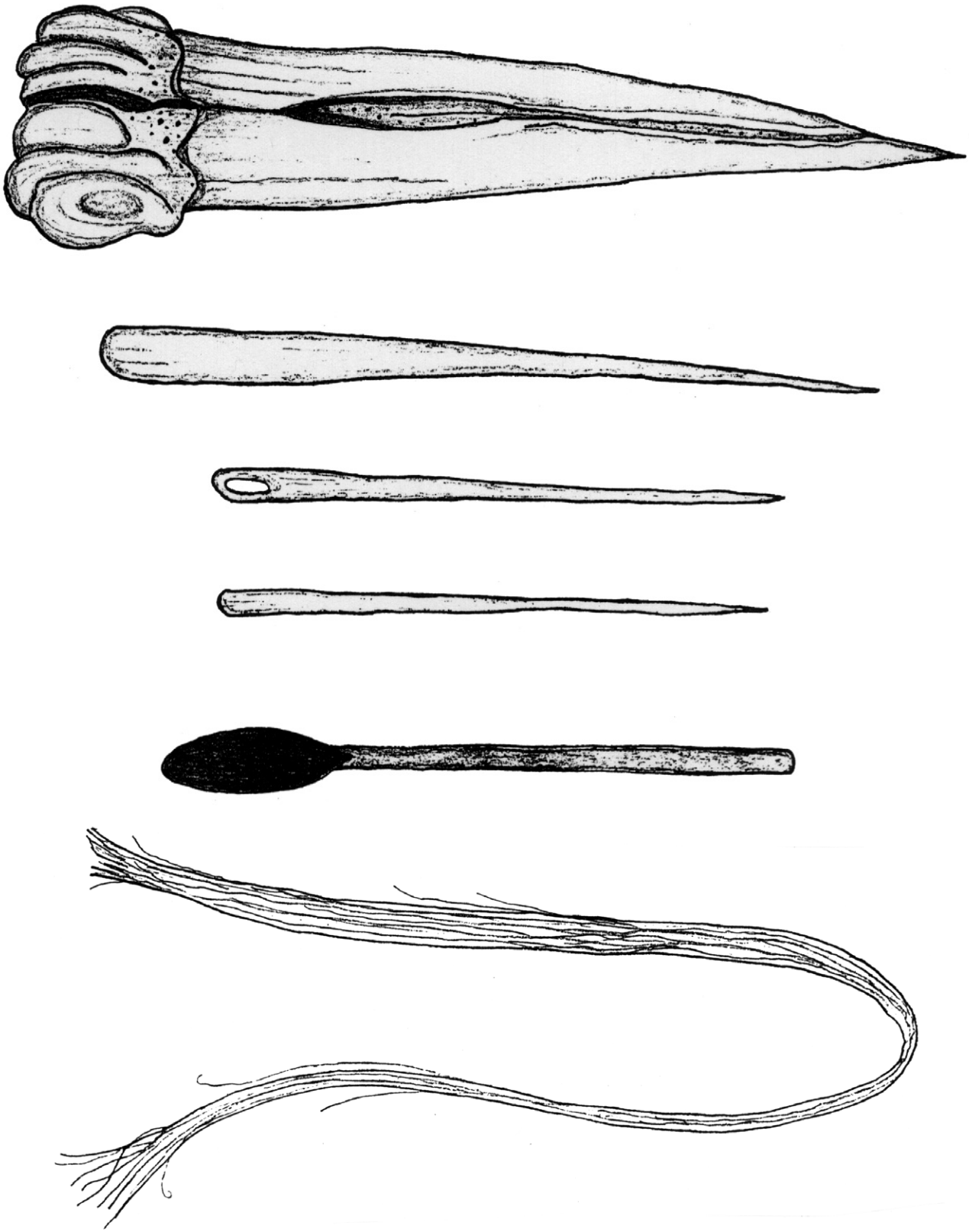




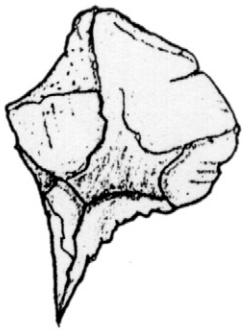
Lesson 2—Arch Activity: Tool Time
Group 3 (continued)



Lesson 2—Arch Activity: Tool Time
Group 4



Lesson 2—Arch Activity: Tool Time
Group 4 (continued)



Lesson 3—Narrative: What Technology Did Ancient People Use to Harvest and Process Plants?

Ancient people used stone, bone, wood, and antler tools to harvest and process plants.

Archaeologists focus on stone and bone artifacts because these are the most common artifacts found at sites. But they sometimes find plants and seeds preserved at prehistoric sites in Montana. These discoveries demonstrate the importance of plant resources to prehistoric peoples. Most seeds and plant remains are found in ancient campfires. They are often charred and hard to identify.

Plants were always a significant food source for Montana's ancient people. Archaeologists find the most evidence of plant food use between 8,000 and 1,500 years ago. Ancient people used plants medicinally to heal wounds and cure sick people. Many modern medicines are made from plants that prehistoric peoples used. Ancient people used rope and twine made from plant fibers for lashing equipment together, tying tipi poles, and as bow string. And they also used plants in ceremonies of all types.

Many types of plants grow across Montana. Some plants were more important to ancient people than others. Knowledge of important plants, and where they could be found, was passed from generation to generation. Women and girls harvested seeds, berries, and roots throughout spring, summer, and fall. This provided important winter food to supplement meat.

Roots, such as **bitterroot** (Montana's state flower) and **camas**, were dug with a **digging stick**. The digging stick was three to four feet long and made of antler or wood. The digging end was pushed into the ground to move the root up to the surface. It worked like a modern-day dandelion digger. The end of a wooden digging stick was hardened in a campfire. This made the digging end durable and kept it from breaking. The handles of digging sticks were made of deer or elk antler. Styles of digging sticks varied among Montana Indian tribes. Blackfeet Indians used the wood of birch trees for their digging sticks. Other western Montana tribes used hawthorn and serviceberry branches for digging. Digging sticks are rarely found in prehistoric sites. These tools were highly valued and were only left behind when they were broken and could not be repaired.

Ancient people cut branches for digging sticks and poles for structures with **stone knives** and **axes**. They probably used stone flakes and knives to harvest plants like **balsamroot** and **prickly pear cactus** which grow above the ground.

Prehistoric people placed roots and berries on a large, flat grinding stone, called a **metate.** They then mashed the roots and berries with a hand-sized flat rock called a **mano.** This produced juice and pulp. They then dried the pulp into a flour and stored it in skin containers. (They also sometimes used a mortar and pestle to process plant foods.) They dried roots and berries

whole and stored them in bags. And they sometimes ground dried plants for use as flour. People used this flour in stews or made it into cakes or bread. By mixing together mashed berries, dried meat, and fat, they made **pemmican**. Pemmican provided an important and nutritious food during winter when plants were not available and wild game was not plentiful.

Archaeologists have found plant seeds in prehistoric sites throughout Montana. One of the best finds was in the Barton Gulch site in southwestern Montana.

This woman uses a stone mortar and pestle to grind up roots, berries, and nuts. Some ancient people preferred to use manos and metates. *Courtesy Kootenai National Forest.*

For the ancient people of western Montana, camas was an important food source. They harvested the edible roots of the camas with a digging stick. *Courtesy Kootenai National Forest.*

Lesson 3—Vocabulary: What Technology Did Ancient People Use to Harvest and Process Plants?

balsamroot _____

bitterroot _____

camas _____

digging sticks _____

mano _____

metate _____

pemmican _____

prickly pear cactus _____

stone axes _____

stone knives _____

Lesson 3—Arch Activity: Making Pemmican

Grades: 3–8
Time: half-day (1 hr. to soak; 30 min. to prepare; 2 hrs. to bake)
Content Area: science, social studies, and math
Who: small groups

Materials for pemmican:
- **12 ounces of thin-strip beef jerky, 2 cups of fresh or frozen blueberries (or raisins), 2 cups of sunflower seed meats, 1/4 cup of soft margarine.**
- **large mixing bowl and large flat rock that has been *sterilized* to serve as grinding board (metate) and smaller, *sterilized* rock to serve as a masher (mano), 1–2 cookie sheets for drying or baking.**

Objective and Outcome

- Students will learn about the process by which pemmican was made and the ancient technology used to create it.
- Students will make a native food using *sterilized* grinding stones and mixing it by hand. They will then sample the food they have created.

Activity

1. Soak the jerky in 1 cup of water for 1 hour.

2. Assign students to groups of three to five. *Have them wash their hands before they begin.* Groups take turns mashing the jerky on the grinding stone. Place ground jerky in bowl. Once jerky is ground, begin to add berries to a bit of the jerky and mash together on the grinding stone. Continue this process until all the jerky and berries are mixed together. Then add sunflower seed meats.

3. Put jerky/berry/sunflower mixture in bowl. Add margarine and mix all together thoroughly. Knead the mixture. It should be the consistency of trail mix.

4. Place mixture on cookie sheets. Spread flat. Bake at 200 degrees for 2 hours.

5. Eat and enjoy.

Note: If you don't have a grinding stone and a stone masher, you can chop the jerky with a knife and put the jerky, blueberries, sunflower seed meats, and margarine in a bowl and mix well.

Extensions

3–8:

- Research vocabulary.

See: Lesson 3C—Vocabulary.

- Research other native recipes and foods introduced by American Indians.
- Discuss with the class what these contributions are.
- Find other American Indian recipes such as those for fry bread or wild rice soup. Make and sample these traditional foods.
- Put together a cookbook with 5–15 ancient recipes using traditional foods.

Lesson 4—Narrative: What Animals Did Ancient People Eat, and How Did They Hunt Their Prey?

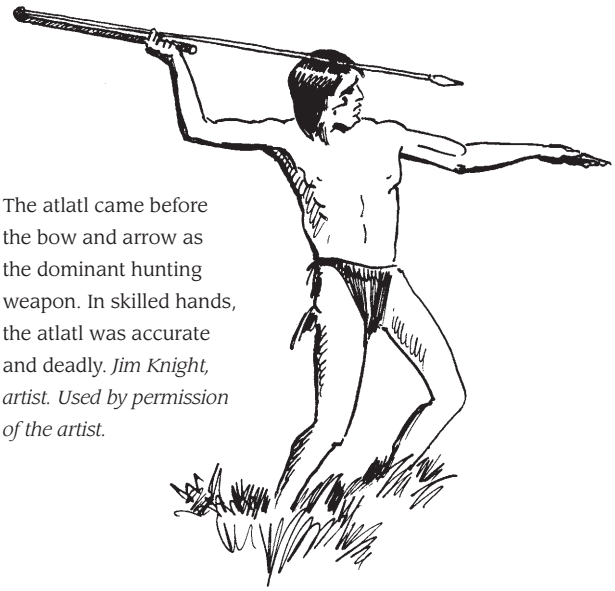
Ancient people hunted prehistoric and modern-day bison, elk, deer, and other animals with a variety of techniques.

Today many Montana families choose to hunt big game and game birds for food. Ancient Montanans did not have a choice. They depended on the animals they hunted for protein, a nutrient all humans need to maintain health. For men and boys, hunting was a constant, daily activity. Some women also hunted.

When people first arrived in Montana, at least twelve thousand years ago, they hunted the Ice Age **bison** (or buffalo)**, mastodons**, and **woolly mammoths**. These huge animals are now extinct. Ancient people hunted and killed these large animals with hand-held **spears**. They chased many into gullies and spring bottoms, where the great beasts became mired in mud and muck. Then prehistoric people—working as a group—were able to kill their giant prey in these confined spaces. Hunting this way was very dangerous because the hunters had to get in close proximity to their prey in order to thrust their spears into vulnerable areas like the lung cavity. These hunts involved much planning, preparation, and ceremony.

About nine thousand years ago, prehistoric hunters began using the **atlatl**, or spear thrower, to propel a long, slender, stone-tipped dart. The atlatl enabled hunters to distance themselves from prey. By this time, the giant Ice Age mammals had disappeared. Instead large bison, deer, elk, and other game became the primary prey for prehistoric hunters. These hunters used sophisticated hunting techniques to stampede and corral bison into natural traps and gullies.

Prehistoric groups began to use the **bow and arrow** about two thousand years ago. This new weapon increased the distance a hunter could shoot accurately. The stone projectile points on arrows were much smaller than those used with the atlatl or the hand-held spear. Bow-and-arrow hunters were the avid and sophisticated bison hunters that people imagine roaming the plains of Montana. There were few or no bison west of the **Continental Divide**, but the prehistoric people who lived there made annual trips eastward to hunt bison. These trips became



The atlatl came before the bow and arrow as the dominant hunting weapon. In skilled hands, the atlatl was accurate and deadly. *Jim Knight, artist. Used by permission of the artist.*

especially popular when the use of the horse became widespread about 250 years ago.

In western Montana, ancient people hunted elk, deer, moose, and sheep, and they fished the many streams. On the east side of the Continental Divide, ancient people primarily hunted bison. They also hunted pronghorn antelope, elk, deer, sheep, rabbits, porcupine, beaver, marmots, and birds. Remains of these animals are found in many prehistoric archaeological sites like Pictograph Cave near Billings.

Today the **short grass plains** of eastern Montana may look devoid of natural plant and animal life. That is not true, but it was even less the case in prehistoric times. The grasses and other **forbs** (herb-like plants) that grew on these plains contained protein that enabled animals like bison to build up mass. This extra weight then helped them survive the cold winter months. As a result, during ancient times, immense herds of bison and other large game made their homes on the plains. This gave Montana's prehistoric people a tremendous supply of meat on the hoof!

For over eleven thousand years, large game, especially bison, was the main source of subsistence for many prehistoric people of Montana. These hunters had to be clever and successful in their endeavors to hunt these large animals. Young hunters served long apprenticeships with their elders, absorbing knowledge and experience. This enabled them to almost instinctively know what hunting strategy to use in any given situation. Before 1700, they did not have horses, and so they had to devise ingenious methods to hunt these large game. They used **drive lines**, or lines of rock piles, to funnel animals into areas where other hunters waited to ambush and kill them. They also used drive lanes—defined by two converging lines—to lead bison to **buffalo jumps**. A **pishkin**—the name the Blackfeet used for a buffalo jump—was a steep cliff over which hunters drove bison to their deaths. If an animal did not die, hunters waiting at the foot of the cliff killed it. Native Americans used buffalo jumps heavily as a hunting method between 2,500 and 1,200 years ago.

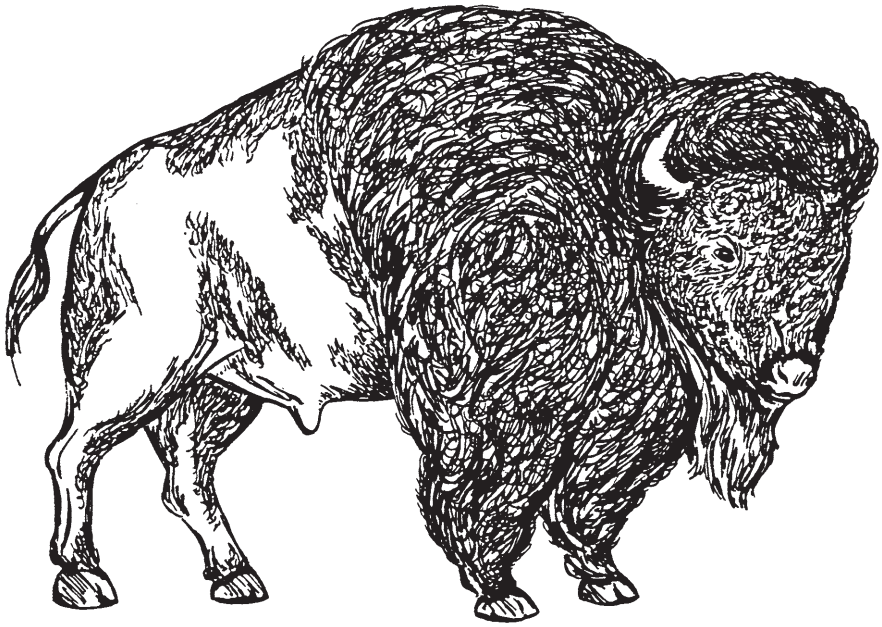
Ancient hunters also built sophisticated **wooden corrals** to capture bison, deer, mountain sheep, and antelope. These ancient corrals were sturdily built and could hold as many as ten to twenty bison. Some ancient corrals had bison skulls around them; prehistoric hunters believed that these skulls invoked magical spirits that helped lure the animals inside. A shaman, or spiritual leader, would sing and perform rituals near the corrals to aid the hunters. Hunters also used **natural traps,** formed by ravines or draws or even sand dunes, to capture their prey. They herded animals into these natural traps where they could surround and kill them.

Once they had killed the animals, prehistoric groups immediately butchered them. Otherwise, the meat would spoil in the hot sun, and the smell would attract wolves, grizzly bears, and other predators. These people did not have refrigerators. They used sharp stone flakes, stone knives, and bone tools to do the butchering. The butchering process was grueling work. The average carcass of a female bison provided 180 kilograms of meat. After

field butchering, the people hauled pieces of the carcass back to camp. Sometimes, they left excess meat at the kill site. Back at camp, they cut the meat in strips and hung it on willow frames to dry. The women dressed the hides, which were then cleaned and tanned and used for tipi covers, carrying bags, clothing, and moccasins.

Animals provided a main source of food for the subsistence of ancient people. Large animals like bison provided quantities of meat for the long Montana winter. Hunting could be dangerous, and often hunters were wounded, or even killed, in the process.

The public can visit some buffalo jump sites in Montana. These include the Bootlegger Site near Chester, the Madison Buffalo Jump near Three Forks, Ulm Pishkin near Great Falls, and the Wahkpa Chu'gn Site near Havre.



For thousands of years, the buffalo provided food, shelter, and spiritual guidance to Montana's ancient people. The buffalo remains a sacred animal to many Indian people today. *Courtesy Montana Historical Society.*

Lesson 4—Vocabulary: What Animals Did Ancient People Eat, and How Did They Hunt Their Prey?

atlatl _____

bison _____

bow and arrow _____

buffalo jumps _____

Continental Divide _____

drive line _____

forbs _____

mastodon _____

natural traps _____

pishkin _____

short grass plains _____

spears _____

wooden corrals _____

woolly mammoth _____

Lesson 4—Arch Activity: Stone Tool Measuring

Grades: 3–8
Time: 45 minutes
Content Area: math, science, and writing
Who: small groups and individuals

Materials:
- **paper and pencils**
- **rulers (centimeters)**
- **projectile points from Technology Tool Kit (or pictures of points if kit is unavailable)**
- **Artifact Data Sheet (attached)**

Objective and Outcome

- Students will learn how archaeologists use measurement and math skills to study stone tool hunting technology.
- Students will use metric system to measure and record data to describe artifacts.
- Students will identify point groups for spear, atlatl, or bow and arrow.

Activity

1. Tell students they will record measurements for three different projectile point groups (A, B, and C). They will write down the number of each artifact in the group and then write its length and width on an Artifact Data Sheet. Students will be asked to identify from the measurements which points they think were used as spear, atlatl, or arrow points.

2. Divide the class into three groups. Give each group one projectile point group; each point group should include 5–10 artifacts.

3. Have each student measure—using a ruler—the maximum length and width of each artifact to the nearest millimeter. Have each student record the information for each artifact in the group on the attached Artifact Data Sheet. (They will each need three Data Sheets, one for each artifact group.) Give each group about 10 minutes to measure their artifacts, and then ask the groups to trade artifacts.

4. Once students are finished, ask Grades 3–5 to figure out the size range for each group of artifacts. What was the longest/shortest point in each group, etc.? Ask Grades 6–8 to calculate averages using the mean length and width of each projectile point group.

5. Ask students to identify which point groups were probably used for spears (largest), with atlatls (medium-sized points) and with bow and arrow (smallest points). Are there any points that might be used in two ways (overlapping range)?

6. Have students use their measurements to create a key identifying the different kinds of points.

7. Have students discuss other characteristics that distinguish the different groups (e.g. notches vs. no notches).

Extensions

3–5:

- Research vocabulary.

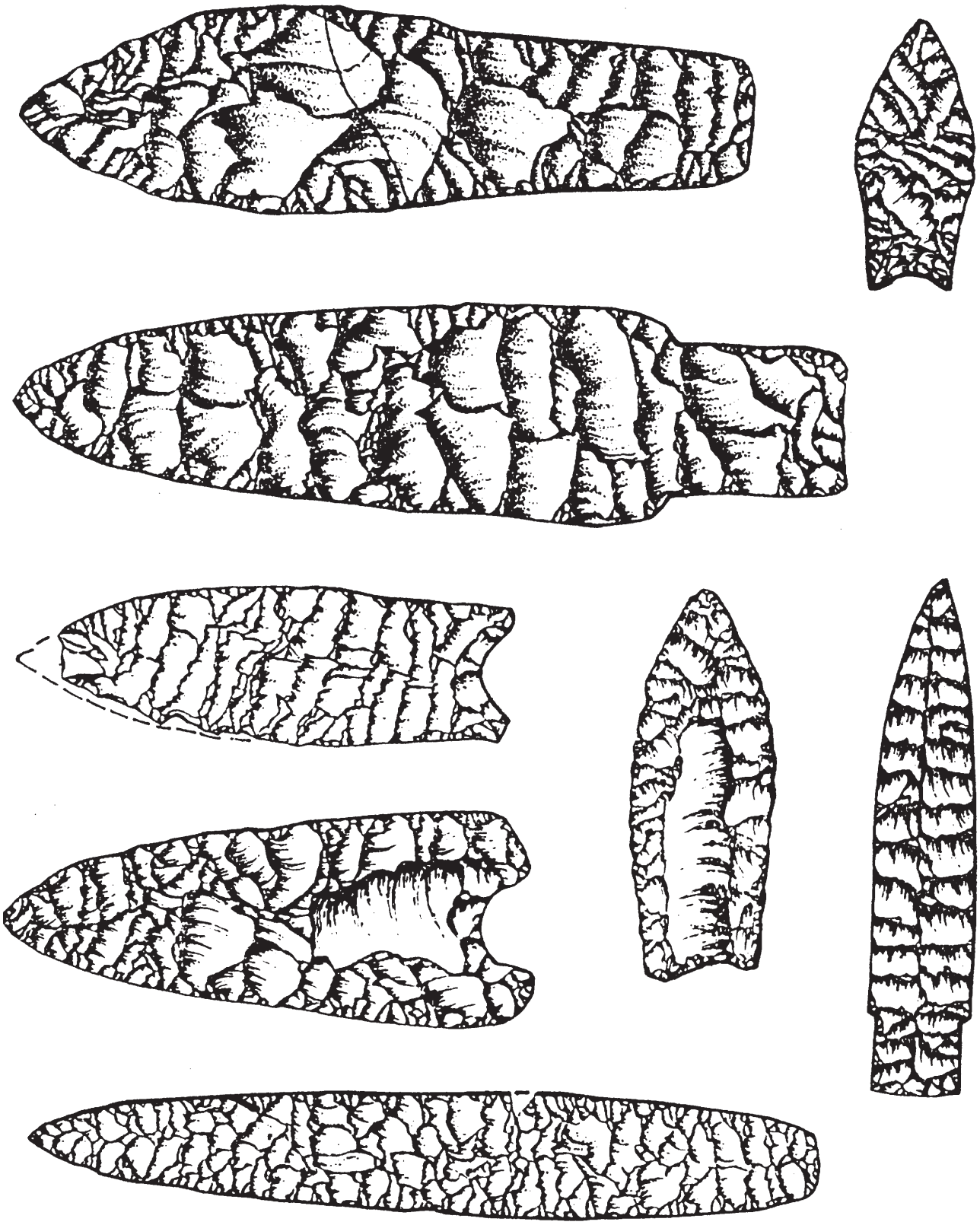
See: Lesson 4B—Vocabulary.

- Have each group measure the height of each person in their group and calculate the range of heights for the group.

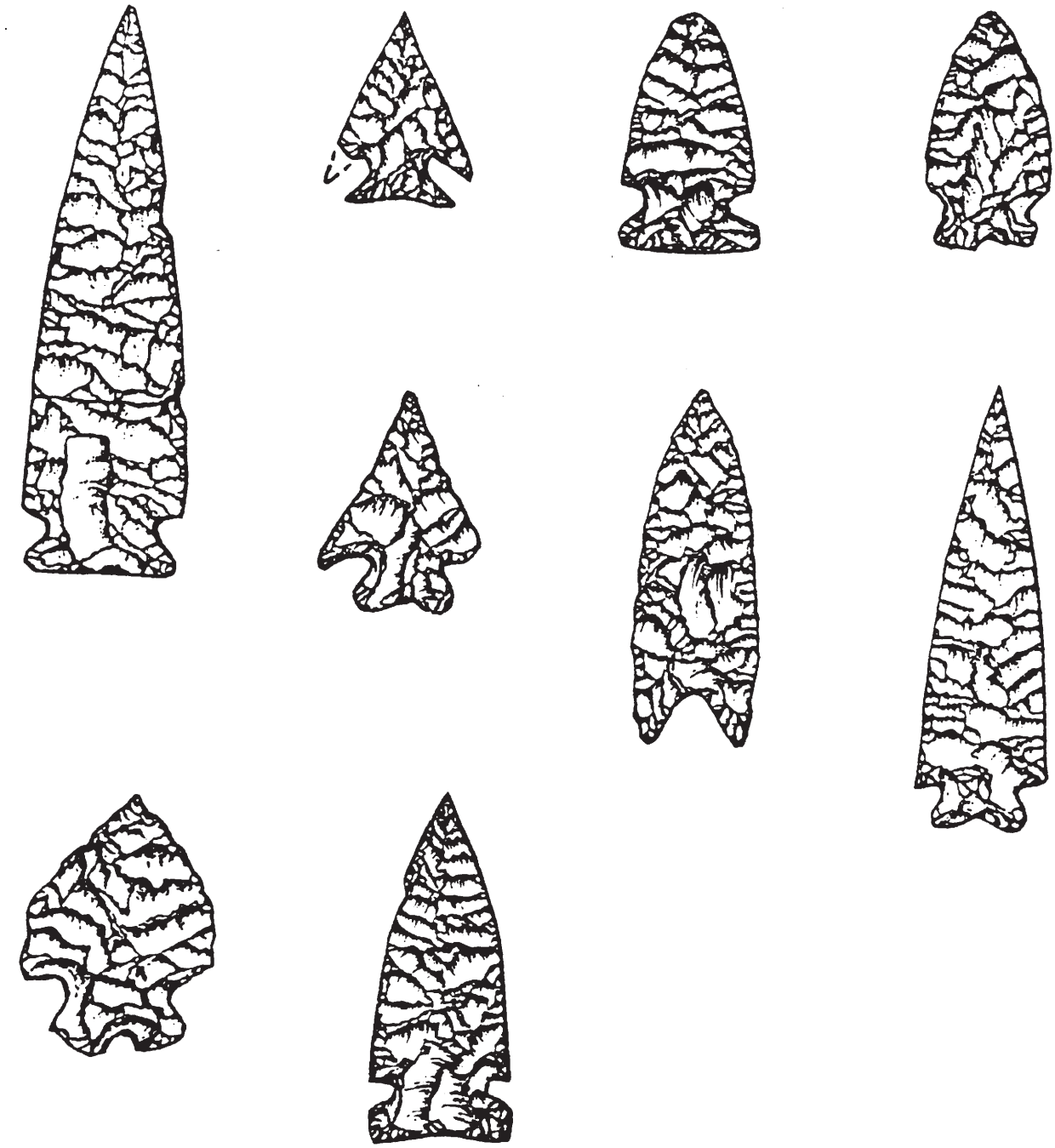
6–8:

- Have each group measure the height and head size (diameter) of each person in the group. Have the group calculate the average group height and head size, using the mean and the median. Does the mean or median give the best average in this case?

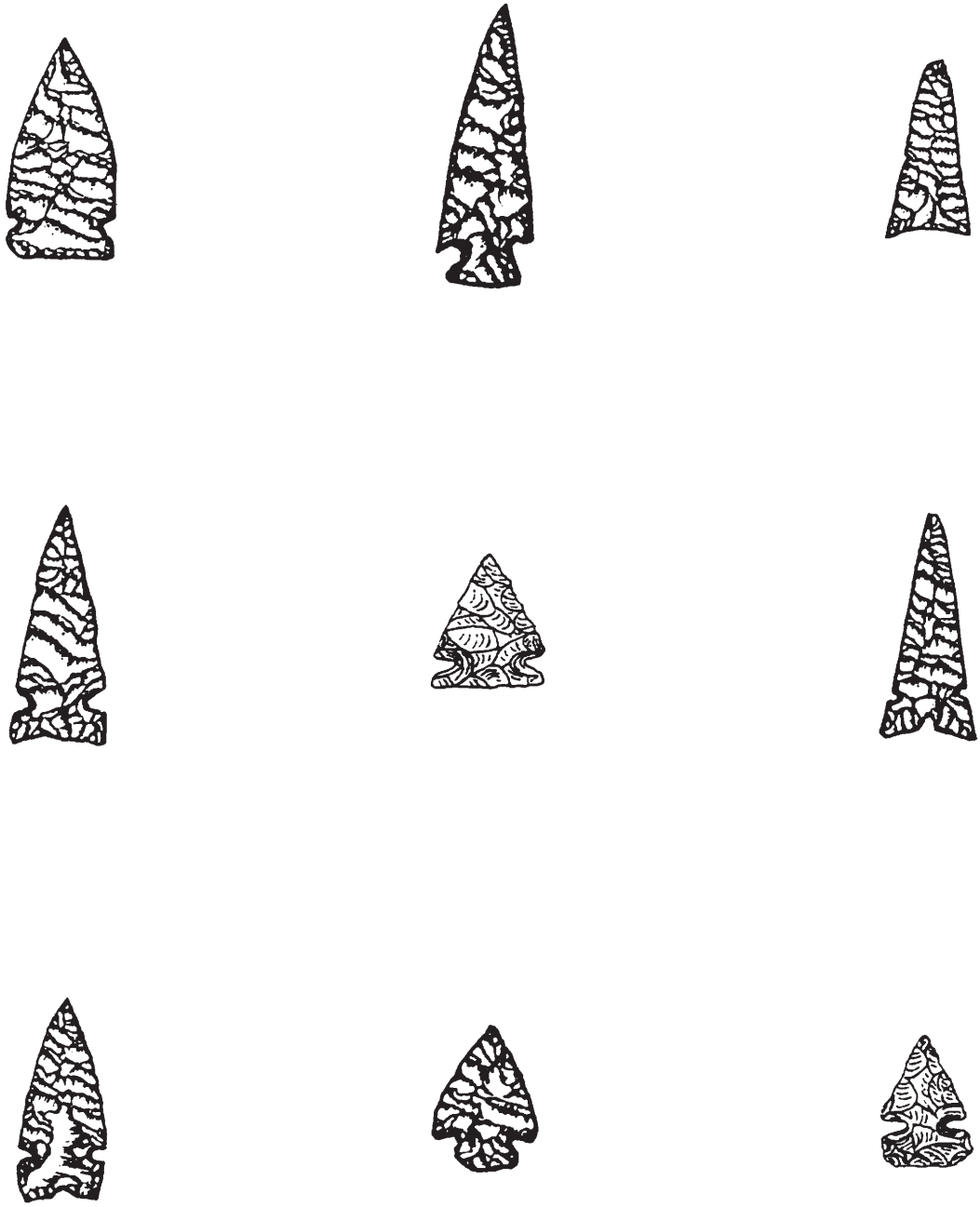
Lesson 4—Arch Activity: Stone Tool Measuring
Group A



Lesson 4—Arch Activity: Stone Tool Measuring
Group B



Lesson 4—Arch Activity: Stone Tool Measuring
Group C



Lesson 4—Arch Activity: Stone Tool Measuring
Artifact Data Sheet

Name: _____ Artifact Group: _____

Artifact Number	Length (mm/cm)	Width (mm/cm)

Stone Tool Mean

Length	Width
_____	_____

Stone Tool Range

Length	Width
_____ to _____	_____ to _____

Lesson 5—Narrative: What Plants Did Ancient People Use?

Roots, berries, bulbs, and other parts of plants provided food and medicine for ancient people.

When hunger strikes, you simply open the refrigerator door, or cupboard, and take out food to eat. Your parents prepare meals from food they buy at the grocery store. Some Montana families choose to grow gardens for fresh produce, or they hunt game animals. Maybe your family drives to a local restaurant for a meal. Ancient Montanans did not have all the choices we have today. They did not rely on grocery stores or restaurants for **subsistence**. They depended on plant foods they gathered and animals they hunted in the wild.

Prehistoric Montanans did not plant gardens or raise animals for food. But many ancient people living in other parts of the New World did. By the time Europeans arrived in the New World, most Indians living in the east and southwest were **agriculturalists** who cultivated plants, including over three hundred different food crops. Foods introduced to the world by American Indians include potatoes, tomatoes, squash, beans, corn, peanuts, cashews, blueberries, and maple syrup. The plant foods first domesticated by Indians feed much of the world today.

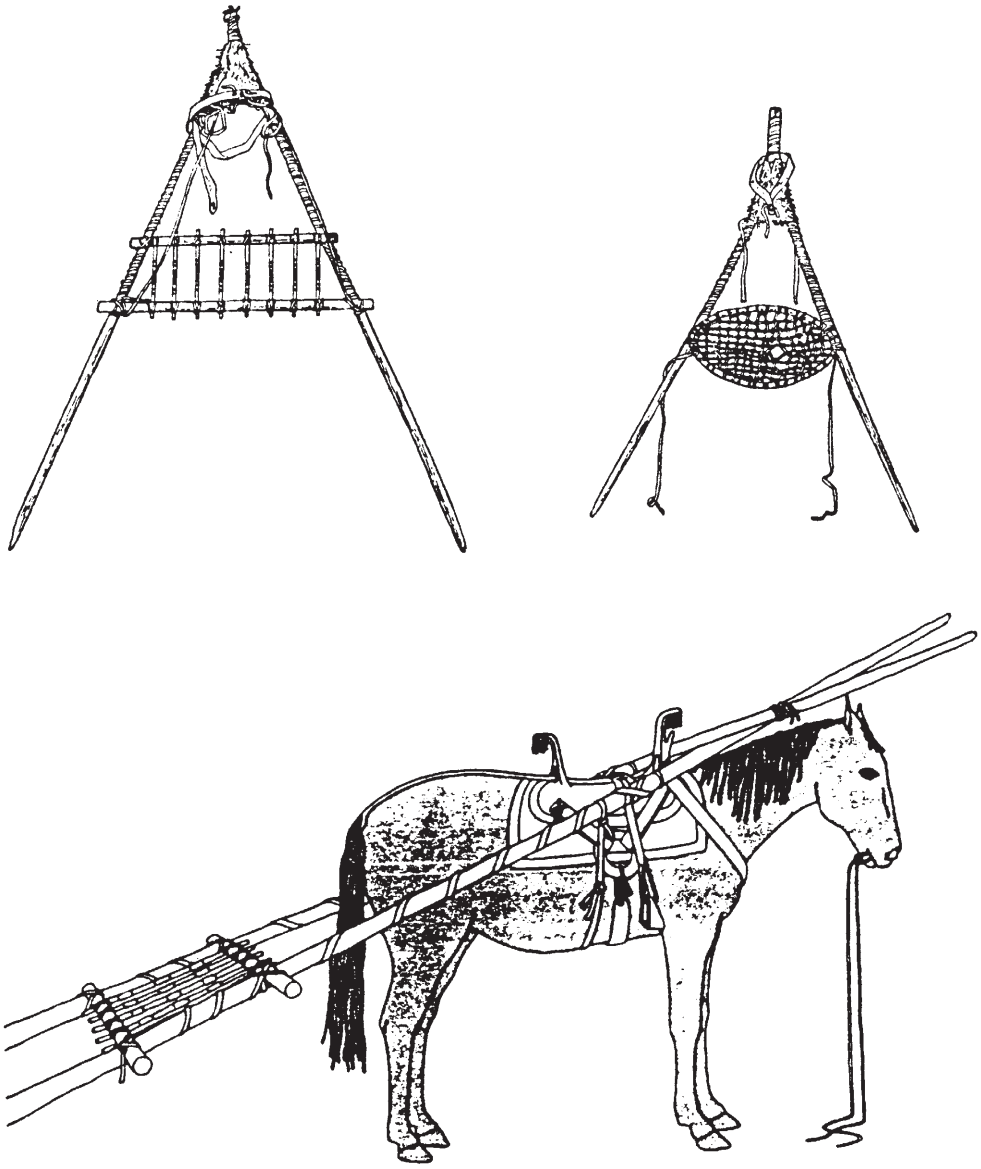
Prehistoric people in Montana were **hunters and gatherers**. They were not agriculturists. They were also **nomadic**, moving as the seasons changed to hunt and gather wild food in different places. A variety of plants grew through the warm seasons. Animals moved as plants were available for their subsistence. People lived along the warmer river bottoms during the cold weather. They traveled to the foothills and mountains during warm weather to hunt animals and gather roots, bulbs, and berries. This was their **yearly subsistence round**.

Traveling to gather plants and hunt animals was their way of life. Living a nomadic lifestyle meant traveling light and carrying few possessions. For the majority of prehistoric time, people did not have horses to transport their personal items. Dogs hauled belongings for ancient people on a **travois**. They carried only the necessities. They could not carry a great supply of food. Gathering plants and hunting animals was a constant and necessary activity of all prehistoric groups in Montana.

All people need food and water to survive. Each person needs a certain number of **calories**, or food energy, to stay alive. The number of calories each person needs varies depending on a variety of factors. A person's age, body size, and activity level create the need for different amounts of calories. Young people require more calories than an older person does, as young bodies are growing. People who live in cold climates also require more calories than those living in warm areas. In Montana's rigorous climate, people needed many calories of food to survive. Prehistoric groups did not have the technology to store large

quantities of food. When food—particularly bison—was plentiful, times were good. But each year in late winter and early spring, prehistoric groups often went hungry. They might eat a meal every couple of days. A meal might be a little camas flour mixed with water and pieces of boiled bison hide. Stored plant food often got them through these tough times.

In ancient times, the kinds and availability of plants varied from eastern to western Montana, from lowlands to high mountains, and from spring through summer to fall. Many plants that grew in Montana during prehistoric times, such as camas and bitterroot, are similar to the same plants today. People used the plants that grew in their territory because they knew where and when to find them. Spring and summer were seasons to gather plant roots and bulbs. Late summer and autumn were times to harvest nuts and berries.



Montana's ancient people used the travois to move their food, shelter, and other belongings from place to place. Before Euro-Americans introduced horses, the travois was harnessed to dogs. *Courtesy Kansas State Historical Society.*

People did not just use plants for food. Some plants were of great medicinal value. **Medicines** made from plants cured ills and healed wounds. In fact, the soft drink, Dr. Pepper, got its start as a traditional medicinal tonic made from peppery-tasting roots and bark. Prehistoric people placed purple coneflower on rattlesnake bites and other venomous stings. They used the leaves of the balsamroot plant as a **poultice**, a moist covering, for burns, cuts, and bruises. Tea, made from the stem or bark root of a wild rose, helped cure stomach problems. They used yarrow on cuts to help stop bleeding. They also boiled yarrow and used it to wash and disinfect wounds. The Flathead Indians used the huckleberry plant for heart ailments and arthritis.

Plants could also help people manufacture useful items. Prehistoric people used milkweed and juniper to make **cordage**, an ancient form of braided string. A nine-thousand-year-old net made of juniper bark cordage was found in Mummy Cave near the Montana/Wyoming border. The net was used to trap animals.

Plants were very important to ancient people. It is estimated that over three hundred different species of plants were used by the prehistoric people of Montana. However, until recently, archaeologists often ignored this important facet of prehistoric life. This is because direct evidence of plant gathering and processing has been difficult to find in Montana archaeological sites, where plant remains often do not survive over time. Now, new methods of analysis have enabled archaeologists to better study this activity. Before this new knowledge became available, oral histories and early written descriptions of plants used by historic Indian tribes helped archaeologists understand how prehistoric people probably used plants. And today, many tribal members still gather plants in special areas. They process and use them in the ancient way as food or medicine. The study of modern traditional plant use is called **ethnobotany**.

Roots were a primary plant food source for prehistoric people. Root crops such as camas, bitterroot, biscuitroot, and Indian breadroot provided them with nutrients, minerals, and vitamins, as well as **carbohydrates** and **protein**. Root harvesting was women's and girls' work among the Salish, Flathead, Blackfeet, and Shoshone Indians. They used a special **digging stick**, made of wood and/or antler. They harvested the roots at certain times in spring when they were most edible. Bitterroot was harvested before it flowered; camas was harvested after it flowered. Through knowledge passed on by elders, ancient people knew when roots were at their prime. This traditional knowledge continues to be passed on today.

Once a root was dug, it could be **processed**, or prepared, in many different ways. Some roots were dried in the sun by spreading them out on animal hides. These were saved for winter meals. People also boiled and steamed roots, or roasted them in pits dug into the ground. Roots could be eaten plain, mixed with berries, or added to stews as a thickener.

Camas, a very popular root crop among the prehistoric people of western Montana, was stored whole, squeezed into little cakes, or mashed

and formed into round loaves. Camas was also boiled to make a sweet-tasting drink much like coffee or tea. Before sugar was introduced, dried camas was the primary sweetening agent used by many Indian groups in the Pacific Northwest.

Often prehistoric people dried the roots and then mashed and ground them with a stone **mano** and **metate** to create flour. This flour was then used in cooking. A metate is a large flat stone with an indented area to place roots. The mano is a smaller hand-held stone used to mash and grind the root back and forth within the metate's indented area until the root is finely ground. Prehistoric manos and metates show the wear of many years of use.

Berries and fruit were a staple in many prehistoric diets, especially during the fall. The people harvested serviceberry, huckleberry, chokecherry, gooseberry, currant, and buffaloberry as they ripened in late summer or early autumn. The berries harvested after the first frost are considered the sweetest by many today. Berries and fruit were eaten fresh, dried in the sun on hides, or ground with a mano and metate. Ground berries and fruit were mixed with fat and meat, then formed into cakes and loaves. Lewis and Clark wrote in their journals that they saw Indian women making serviceberry cakes that weighed fifteen pounds! Prehistoric people dried a mixture of berries and/or fruit, meat, and fat to create **pemmican**. Pemmican could be stored to eat during the winter months or packed along on journeys.

Other parts of edible plants these early people consumed included the seeds of yucca, pigweed, wild sunflower, and wild rye and the nuts of limber and whitebark pine. They also ate the leaves and fruit of the prickly pear cactus. Prehistoric gatherers collected the bulbs of sego lily and wild onion, and in the spring, they ate the early shoots of the arrowleaf plant like celery.

Many of the plants you see when you hike through the prairies or mountains provided food and medicines for ancient people. Plants were extremely important for survival, especially when prehistoric hunters could find no animals to kill. Today many American Indians, and others, use plants as the ancient people did. Tribes such as the Blackfeet, Salish, and Kootenai Indians still use traditional huckleberry and bitterroot gathering grounds each year.

It is always important to identify plants before you eat or use them. Some plants like the water hemlock are deadly poisonous, so please exercise caution.

Lesson 5—Vocabulary: What Plants Did Ancient People Use?

agriculturalist _____

calories _____

carbohydrates _____

cordage _____

digging stick _____

ethnobotany _____

hunters and gatherers _____

mano _____

medicines _____

metate _____

nomadic _____

pemmican _____

poultice _____

processed _____

protein _____

subsistence _____

travois _____

yearly subsistence round _____

Lesson 5—Arch Activity: Surviving the Wilds

Grades: 3–8
Content Area: science, history, and writing
Who: whole class and individual

Materials:
- **paper and pencils**
- **Arch Journal**

Objective and Outcome

- Students will gain an understanding of how ancient people used the natural environment as their grocery store.
- Students will identify plants and animals in their local area that could be used for food and clothing.
- Students will create a chart comparing subsistence elements of our culture with those in prehistory.

Activity

1. Tell students to imagine that one day they wake in the wild next to a river. After they find themselves there, they look around and find no other people. There are no roads, stores, buildings, or other signs of civilization. All they have is a book for identifying plants. In order to survive, they will need food, tools, and shelter. They must rely on nature to provide for their needs.

2. Discuss what their needs would be and how they would do things. List all ideas on blackboard.

a. Ask students what their first concerns would be?

b. Ask students what animals and plants would be available for them to eat? How would they gather plants? How would they hunt?

c. What tools would they need for hunting and plant gathering?

d. How would they cook food? What would they need to cook it?

e. If they need to store food, how would they do it?

f. How would the river be important for their survival?

g. Would it be easier to survive in a desert than in Montana? What advantages would a desert environment offer?

h. How much time in a day would survival activities take? When would there be play time?

i. In summary, what special skills would students need to develop to survive in the wild and what would their lives be like?

3. Instruct each student to make a chart in their Arch Journal with six comparisons of our food today with that of prehistoric people.

Extensions

3–5:

- Research vocabulary.

See: Lesson 4A—Vocabulary.

6–8:

- Challenge students to read about the domestication of plants and find out which domesticated plants came from which continents. Examine the world map and show where plants came from.

Lesson 6—Narrative: Why Do We Preserve and Protect Archaeological Sites?

Preserving and protecting archaeological sites provides information for future generations.

Many families record events and celebrations with photographs. The photos show what family members looked like through time. If the photos are lost or destroyed, the record of the family changes. The events remain in people's memories, but the objects describing those memories—the photographs—are gone forever. A future archaeologist would have difficulty interpreting your past if artifacts have vanished.

The same difficulty applies to an archaeological site and its record. The position and location in which artifacts are found provide clues for an archaeologist. If the objects are destroyed or missing, or if the artifacts are disturbed or mixed up, the archaeologist will find it difficult to determine the story of the site. The place where an artifact was left by prehistoric people, and that position in relationship to other artifacts in the site, is known as **context**. Context is vital during archaeological research. Context provides solid clues for site reconstruction. If the context is disturbed, important evidence about the past is forever lost. Context may be disturbed accidentally or intentionally by humans, or by natural occurrences.

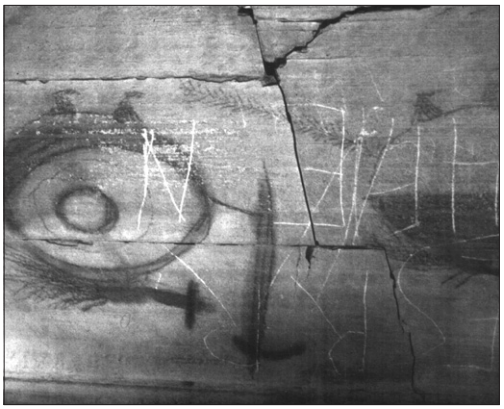
All pieces of the puzzle are necessary for interpretation and reconstruction of the past. Context assists archaeologists in dating a site, and in determining the activities that took place there. Scientists can learn about the plants and animals eaten by people of long ago. And they can verify in which season of the year the ancient people consumed these foods. Archaeologists even discover how long a site was **inhabited,** or lived in, by studying context.

If a site is disturbed or destroyed before archaeologists can make proper records, valuable information is lost. A site can not be re-created once artifacts have been disrupted. Archaeological sites are fragile, **non-renewable resources**. It is extremely important to leave a site as it exists, unless you are prepared professionally to take responsibility for recording it properly.

If you have ever lost something special, you know that you felt sad about the loss. Archaeologists experience the same feeling if a site is destroyed. Knowledge and understanding of the past—the most important things archaeologists learn from a site—are lost forever. Many artifacts are very beautiful and are valued for their artistic qualities. Some people steal these items from archaeological sites and sell them. These **pothunters,** or people who only dig for pretty artifacts like whole pots, take away our chance to gain awareness of the past. They rob us of our past. Other people **vandalize** sites and destroy them for no reason. In addition to vandals and pothunters, other circumstances threaten archaeological sites. A new housing development may disturb an ancient campsite. Other threats may be construction of shopping malls or oil and gas pipelines. A farmer

Right: Prehistoric artifacts are sometimes bought and sold along with other Native American craft items. However, without their context, artifacts lose their meaning and significance to archaeology.

Below: Modern vandals scratched their initials over this ancient rock art in Fergus County, Montana. Acts of vandalism can destroy archaeological sites. *Courtesy Montana State Historic Preservation Office.*



tilling a new field may disturb artifacts. Progress and growth in our civilization threaten archaeological sites daily. We lose knowledge of the past any time a site is improperly dug or disturbed.

Laws are written to preserve and protect archaeological sites. The first law passed in the United States that protected sites was the **Antiquities Act of 1906**. The Antiquities Act makes it illegal for people to disturb archaeological sites on federal **public land**—land that belongs to the federal govenment—without special permission from the government. The **Montana State Antiquities Act,** passed in the 1970s, protects archaeological and historical sites on state-owned property. These laws also allow the police to arrest pothunters and fine them for **looting**, or illegally taking artifacts away from, sites. These and other federal and state laws protect and preserve the archaeological past on public lands for future generations.

Archaeological sites and artifacts are messengers from the past. If we know how to read the messages, artifacts tell us much about people of long ago. The people who lived on a site may have been there hundreds, or even thousands, of years ago. All cultures, modern or ancient, contain value for our society.

The past is our **legacy**, a gift passed down to us by those who first inhabited this land. Our connections to the past are strong. And all Montanans deserve an opportunity to know about the people who were here before us. You are a caretaker, or **steward**, of our **heritage,** which includes the traces of Montana's early peoples that lie buried in our landscape. Protect and preserve the past for present and future generations.

Lesson 6—Vocabulary: Why Do We Preserve and Protect Archaeological Sites?

context _____

heritage _____

inhabited _____

laws _____

legacy _____

looting _____

Montana State Antiquities Act _____

nonrenewable _____

public land _____

steward _____

vandalism/pothunters _____

Lesson 6—Arch Activity: The Importance of the Past

Grades: 3–8
Time: 40 minutes
Content Area: history and writing
Who: whole class and small group

Materials:
- **2 photos of family activities**
- **writing tools**
- **Arch Journals**

Objective and Outcome

- Students will identify the importance of their family's past and compare it with the archaeological past.
- Students will write sentences about the importance of the past.

Activity

1. Prior to the activity, instruct students to bring two photographs representing an important family event, for example a family reunion, or a vacation, or a graduation party. Ask them to think about the picture's significance.

2. Divide the class into groups of four. Each student is a writer and a presenter. Instruct students to discuss their photos and their importance within the group. Allow up to 10 minutes.

3. Instruct students to trade photos with another group. Make sure all groups have traded. Next, each group should determine the meaning and significance of the other group's pictures. Each member will write sentences explaining the importance of one photo. Allow up to 10 minutes.

4. Each member then presents the conclusions to the whole class. Ask them to explain clues from the picture that helped identify what that importance was. Ask the owner of the photo if the conclusions are correct and to add information.

5. Pass photos back to the owner. Instruct each student to answer these questions in their Arch Journal (write questions on board or overhead):

a. Why is it important to know about your past?

b. Why is it important to learn about the archaeological past?

c. What can we learn by studying the past?

d. What happens if special items from the past are destroyed?

Some people say that a photograph is worth a thousand words. . . . *Courtesy K. C. Smith, Museum of Florida History, Tallahassee.*

Extensions

3–5:

- Research vocabulary.

See: Lesson 1D—Vocabulary

- Have students write a story about an event or a special object from their past. Place a twist in the story when the event or object disappears.

6–8:

- Have students research other cultures. Look for similarities and differences between their culture and the others. Ideas for research include types of foods eaten, family organization, and types of shelters.

What They Left Behind: Types of Archaeological Sites in Montana

Grades: 4–8
Time: 50 minutes
Content Area: social studies/Montana state history
Who: whole class

Materials:
- **"What They Left Behind" lesson plan, available for download from the following link: http://svcalt.mt.gov/education/Textbook/Chapter2/What%20They%20Left%20Behind%20Archaeological%20Sites%20Lesson%20Plan.pdf)**
- **laser pointer (optional)**
- **laptop and projector**

Objectives and Outcome

Students will:

- Recognize the ways today's landscape provides evidence of ancient habitation.
- Identify types of sites and features left by Montana's first peoples.
- Understand the importance of protecting archaeological sites

Activity

1. Prior to the Activity Print and review either the script or script with accompanying slides. To print the script only, print pages 82 through 84 of this document. To print the script with accompanying slides open the PowerPoint. Select "Print," making sure that "Notes Pages" is selected in the "Print What" dialogue box.

2. Introduce Activity Ask your students, "What traces of the ancient past remain in Montana?" *(Possible answers:* Pictographs, petroglyphs, buffalo jumps, tipi rings.) Tell your students that there are many traces on the land of ancient peoples and that you are going to view a PowerPoint presentation that describes some of the things ancient people left behind. These sites and "features" on Montana's landscape help us better understand how early people lived.

3. Distribute the vocabulary list. Read through the list with your students. Can they guess what any of the terms mean? Tell them that they will need to listen closely for these terms during the PowerPoint and record their definitions. [*Note:* Vocabulary words have been placed in bold italics in the script.]

4. Present PowerPoint (script on page 82)

5. Culminating Activity Guide your students in a discussion of what they just saw, in a way that emphasizes the need to preserve and protect archaeological sites. Questions you might ask include the following:

- If you saw one of these sites in your travels how could you (or would you be able to) tell that it was a place of particular cultural significance?
- What can serious archaeological study of a culturally significant site reveal that casual "artifact collecting" or "pot hunting" cannot?
- What is lost if someone rearranges the rocks in a drive line? Or collects arrowheads without documenting their context?
- For a grade appropriate reading and worksheet on this topic, see Lesson 6, "Why Do We Preserve and Protect Archaeological Sites," (pp. 76–79).

Image credits

Slide 2 (family group processing deer) courtesy Montana Department of Transportation. Slide 23 (schematic of drive lines) courtesy Library and Archives Canada. All other images courtesy Montana State Historic Preservation Office.

What They Left Behind: PowerPoint Script

[SLIDE 1: TITLE SLIDE]

[SLIDE 2: ARTIST'S RENDERING, PROCESSING DEER] The ancestors of modern Native Americans were hunters and gatherers who moved across the landscape for over 12,000 years. They found everything they needed to survive. This presentation describes some of the things ancient people left behind. These sites and "features" on Montana's landscape help us better understand how early people lived.

[SLIDE 3: TIPI RINGS, MEAGHER COUNTY] ***Tipi rings*** like these in Meagher County are the most common type of archaeological site in Montana. Campsites containing from one to over several hundred stone rings are found throughout Montana east of the continental divide. Most of these tipi ring campsites date anywhere from 5,000 years ago up to about 250 to 300 years ago.

[SLIDE 4: TIPI RINGS, HILL COUNTY] Tipi rings show up especially well from the air, like these on the Meisner Ranch in Hill County. Early people may have used these rock rings to hold down their tipis. They were probably used seasonally again and again as the people moved from one camp site to another.

[SLIDE 5: LITHIC SCATTER] Where ***flint knappers*** stopped to make tools, they left a scatter of waste flakes. To most of us, these flakes look like nothing more than rocks scattered around. But the trained archaeologist can see that the flakes were made deliberately by ancient tool makers. This common type of site is called a "***lithic scatter.***" "***Lithic***" is a word meaning "rock."

[SLIDE 6: LITHIC SCATTER, CLOSEUP] Identifying lithic scatters requires knowledge of the types of stone prehistoric people used and an ability to identify the unique characteristics of human-made stone chips.

[SLIDE 7: LITHIC QUARRY, BEAVERHEAD COUNTY] A place where early tool makers collected rock for flint knapping is called a ***lithic quarry***. At South Everson Creek in Beaverhead County, we can see today where ancient people dug material for tools.

[SLIDE 8: ROCK CAIRN, BEAVERHEAD COUNTY] Early people used ***rock cairns***, or piles, like this one in Beaverhead County to mark special places or trails.

[SLIDE 9: ROCK CAIRN, PONDERA COUNTY] The upright stones in this rock cairn, or "feature," in Pondera County is probably very old. The moss or lichen that has grown on it suggests its great age.

[SLIDE 10: ROCK BLIND, BIG HORN COUNTY] At the Cold Rattler Site in Big Horn County, you can see another type of "feature." These are called forts, ***blinds,*** or pits and usually are on high ground or viewpoints like hilltops. There are different ideas about what purposes they served. Travelers might have used them as a lookout

point, hunters might have concealed themselves from passing game, or they might have been used for vision quests.

[SLIDE 11: FORT SMITH MEDICINE WHEEL, BIG HORN COUNTY] The Fort Smith Medicine Wheel in Big Horn County is an example of one of the most unique types of prehistoric stone features. ***Medicine Wheels*** are large stone ceremonial rock configurations. They range in size from 20 to over 100 feet in diameter.

[SLIDE 12: MEDICINE WHEEL DIAGRAM] Medicine wheels come in different shapes and sizes. Although they resemble tipi rings, they likely were used for religious ceremonies. The sacred nature of these features is still recognized today by modern Indian peoples.

[SLIDE 13: PICTOGRAPH CAVE] Early people used caves for shelter. Pictograph Cave in Yellowstone County near Billings is one of Montana's most important prehistoric sites because of its long use. People used this cave for several thousand years. It is a National Historic Landmark and very fragile because of natural deterioration caused by wind and water. This natural erosion is destroying the work early artists left behind.

[SLIDE 14: PICTOGRAPH] In some cave sites, the painted images called ***pictographs***, left behind by the early inhabitants, are still visible on the cave walls.

[SLIDE 15: PICTOGRAPH, FERGUS COUNTY] Someone long ago left his handprint on this wall in Bear Canyon, Fergus County.

[SLIDE 16: PICTOGRAPHS, BROADWATER COUNTY] Erosion is not the only enemy of these fragile cave and canyon sites. Vandals here have chipped away at these ancient Hellgate Pictographs at Canyon Ferry, Broadwater County. Once they are gone, what we can learn from them is gone forever.

[SLIDE 17 PETROGLYPH] In the south central and southeastern part of Montana in sandstone country, images called ***petroglyphs*** are commonly pecked or carved into the soft rock surfaces. While we can often identify the images, like this human, we can only guess what the artist wanted to tell us.

[SLIDE 18 FIRST PEOPLE'S BUFFALO JUMP STATE PARK] ***Buffalo jumps*** are one of Montana's most celebrated and complex prehistoric sites. They are common in Montana and were one effective way hunters had of killing many buffalo at one time. First People's Buffalo Jump State Park (formerly Ulm Pishkun) in Cascade County was probably used several times every year from 900 A.D. to 1500 A.D.

[SLIDE 19: BUFFALO JUMP DIORAMA] This diorama at the Montana Historical Society's Homeland Exhibit shows how buffalo stampeded over the jump. A successful buffalo jump required careful planning and organization. It was dangerous business. Prehistoric hunter-gatherers were very knowledgeable and very skilled.

[SLIDE 20: CAMERON BUFFALO JUMP, MEAGHER COUNTY] At the bottom the Cameron Buffalo Jump in Meagher County, you can see the remains of ancient buffalo bones.

[SLIDE 21: BUFFALO POUND] Not all buffalo kill sites are jumps. Surrounding or corralling buffalo were also common group hunting techniques. The ***corral pound*** illustrated here was also used in Montana. Wooden corrals or simple fences made of fallen timber and brush were placed at the base of steep hills to trap bison herds.

[SLIDE 22: DRIVE LINE, HILL COUNTY] Prehistoric hunters placed ***drive lines***, or alignments, for several miles leading up to a jump or corral. Skilled medicine men made the buffalo stampede. When buffalo stampeded, they did not cross the alignments, and the entire herd would fall over the cliff or run down the hill into the corrals. It was a very powerful and mysterious process. These drive lines are at Fresno Reservoir in Hill County.

[SLIDE 23: 1854 SCHEMATIC OF A DRIVE LINE] This drawing, from 1854, shows how hunters used drive lanes to funnel the buffalo over a cliff.

[SLIDE 24: WICKIUP, MADISON COUNTY] Timber shelters like this one in Madison County are called **wickiups**. Hunters likely used these timber shelters when passing through. Montana's dry climate has preserved some wickiups. You can tell the great age of this one by the moss, or lichen, that has grown on it.

[SLIDE 25: SCARRED TREES, POWELL COUNTY] ***Scarred trees*** are another type of feature that early people have left. The bark on this tree has been carefully removed to serve as a marker along a trail in Powell County.

[SLIDE 26: LOLO TRAIL] Animal trails often were used by early humans, and some of these were then later used by miners and early settlers. The Lolo Trail in western Montana is one example.

[SLIDE 27: HAGAN SITE] The ***Hagan Site*** near Glendive, discovered when a farmer plowed this field, is important to Montana's history because it is the only archaeological site with evidence of agriculture. Most early people moved with the seasons, but people at the Hagan Site grew some crops like corn and tobacco. This site is so special that it is a National Historic Landmark.

[SLIDE 28: TIPI RING SITE, TOOLE COUNTY] Archaeologists must be very respectful of Montana's special places because they are especially important to the heritage of modern Native Americans. Here archaeologists and and tribal members gather together to honor tipi rings at the Benjamin Ranch Tipi Ring Site in Toole County. From tipi rings to stone tools, the archaeological resources of Montana are fragile and need to be preserved. They connect us with 12,000 years of human history. These ancient places and objects give us a window into the past so that we can better understand Montana today.

What They Left Behind: Vocabulary

Tipi rings _____

_____

Flint knappers_____

_____

Lithic _____

_____

Lithic scatter _____

_____

Lithic quarry _____

_____

Cairn _____

_____

Blind _____

_____

Medicine wheel _____

_____

Pictograph _____

_____

Petroglyph _____

_____

Buffalo jump _____

_____

Corral pound_____

_____

Drive line _____

_____

Wickiup_____

_____

Scarred trees_____

_____

Hagan Site _____

_____

Glossary

Ancestor—a person from whom you are descended; a relative from long ago

Anzick Site—the place where evidence (artifacts) of some of Montana's earliest inhabitants were found

Archaeologist—a scientist who studies the lifestyles of ancient people by learning from the objects (artifacts) they made

Arrow point—the hard, sharp stone point of an arrow

Artifact—an object made by human hands

Awl—a small, pointed tool used for piercing holes into hides

Biface Core—a block of stone that has been chipped on both sides (i.e., "two faces") to produce flakes for making into tools

Bone foreshaft—a spear is made of three parts; the point, the foreshaft, and the shaft. The foreshaft is shaped like a finger, but two to three times longer, to which the stone spear point is attached. The other end of the foreshaft is attached to the long part (shaft) of the spear, which is made of wood.

Cast—verb; to make a copy of an object from a mold

Clovis blanks & preforms—finely shaped, but not yet finished stone spear points, which may have also been used as knives

Clovis culture—The Clovis people are some of the earliest known human beings to live in North America. Their customs, ideas, arts, skills, and their tools (how and why they were made) make up the culture of the Clovis people. The time of the Clovis people was about 10,000 B.C.

Clovis spear point—the hard, sharp stone point of a spear made by the Clovis people

Curator—the person in charge of a museum's collection of artifacts

Exhibit—an object or objects displayed for the public for educational or entertainment purposes

Flintknapping—the process of making copies of tools such as spear points by chipping and striking pieces of stone to make the proper sizes and shapes

Mammoth—an extinct elephant that was very big and had long, shaggy hair

Needle—small tool with a tiny hole in one end, used for sewing

Prehistoric—the time before recorded (written) history

Red ochre—an iron-rich red colored dirt used by many prehistoric people in ceremonies

Replica—a copy of an artifact

Scraper—a stone tool most often used to scrape away the soft tissue that covers the inside of an animal hide

Spear point—the hard, sharp point of a spear

Bibliography

The *Montana Archaeology Education Resource Catalog: A Guide to Educational Materials for the Teaching of Archaeology and Prehistory in Montana Schools,* rev. ed. Helena, MT: Montana Historical Society, 2002. Download this comprehensive catalog at http://mhs.mt.gov/shpo/archaeology/mtarchedusesourcecatalog.pdf or call 406-444-7715 to order a hard copy.

Additional recommentations:

Grades K–2

Addy, Sharon. *Right here on this spot.* Boston: Houghton Mifflin Co., ©1999.

Pickering, Robert B. *I can be an archaeologist.* Chicago: Children's Press, ©1987.

Grades 3–5

Duke, Kate. *Archaeologists dig for clues.* New York: HarperCollins, ©1997.

Fradin, Dennis B. *Archaeology.* Chicago: Children's Press, ©1983.

McIntosh, Jane. *Eyewitness: archaeology.* New York: DK Publishing, ©2000.

Panchyk, Richard. *Archaeology for kids: uncovering the mysteries of our past, 25 activities.* Chicago: Chicago Review Press, ©2001.

Grades 6–8

Avi-Yonah, Michael. *Dig this!: how archaeologists uncover our past.* Minneapolis: Runestone Press: Lerner Publishing, ©1993.

Greenberg, Lorna. *Digging into the past: pioneers of archaeology*. New York: Franklin Watts, ©2001.

Holmes, Krys. *Montana: Stories of the Land*. Helena: Montana Historical Society, ©2008, Chapter 2.

Moloney, Norah. *The Young Oxford book of archaeology*. Oxford: Oxford University Press Children's Books, ©2000.

Grades 9–12

Echo-Hawk, Robert C. & Walter R. Echo-Hawk. *Battlefields and burial grounds: the Indian struggle to protect ancestral graves in the United States.* Minneapolis, MN: Lerner Publications Company, ©1994.

Snow, Dean R. *Archaeology of North America*. New York: Chelsea House, ©1992.

Yeager, C.G. *Arrowheads & stone artifacts.* Boulder, CO: Pruett Publishing Co., ©1986.

Adult

Canby, Thomas Y. "The Search for the first Americans." *National Geographic*, vol. 156, no. 3 (September 1979): 330–361.

Davis, Leslie B. "In search of early elephants." *Montana Outdoors,* vol. 17, no. 3 (1986): 27–31.

Frison, George C. *Prehistoric hunters of the high plains.* New York: Academic Press, ©1991.

Lahren, Larry L. and Robson Bonnichson. "Bone foreshafts from a Clovis burial in Southwestern Montana." *Science*, 186 (1974): 147–150.

Taylor, Dee C. "The Wilsall excavations: an exercise in frustration." *Proceedings of the Montana Academy of Science*, 29 (1969): 147–150.

Wilke, Philip J., Jeffrey Flenniken and Terry Oxbun: "Clovis technology at the Anzick Site, Montana." *Journal of California and Great Basin Anthropology*, 13(2), 1991: 242–272.

Primary Sources and How to Use Them

The Montana Historical Society Education Office has prepared a series of worksheets to introduce you and your students to the techniques of investigating historical items: artifacts, documents, maps, and photographs. The worksheets introduce students to the common practice of using artifacts, documents, maps, and photographs to reveal historical information. Through the use of these worksheets, students will acquire skills that will help them better understand the lessons in the User Guide. Students will also be able to take these skills with them to future learning, including research and museum visits. These worksheets help unveil the secrets of artifacts, documents, maps, and photographs.

See the examples below for insight into using these worksheets.

Artifacts

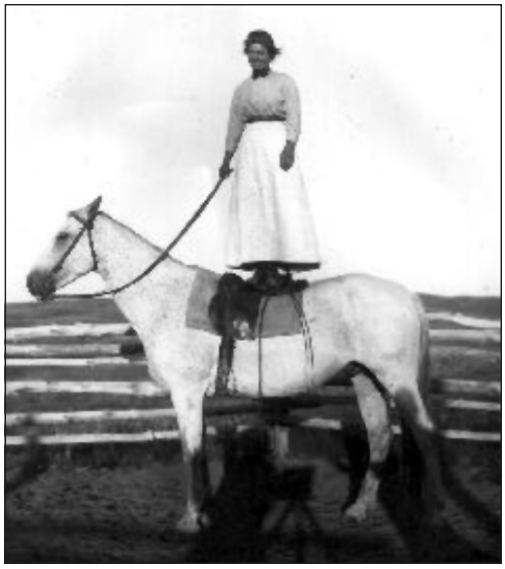
Pictured at top right is an elk-handled spoon, one of 50,000 artifacts preserved by the Montana Historical Society Museum. Here are some things we can decipher just by observing it: It was hand-carved from an animal horn. It looks very delicate.

From these observations, we might conclude that the spoon was probably not for everyday use, but for special occasions. Further research has told us that it was made by a Sioux Indian around 1900. This artifact tells us that the Sioux people carved ornamental items, they used spoons, and they may have had a spiritual relationship with elk.

Photographs

The photograph below is one of 350,000 in the Montana Historical Society Photographic Archives. After looking at the photograph, some of the small "secrets" that we can find in it include the shadow of the photographer, the rough fence in the background, the belt on the woman's skirt, and the English-style riding saddle.

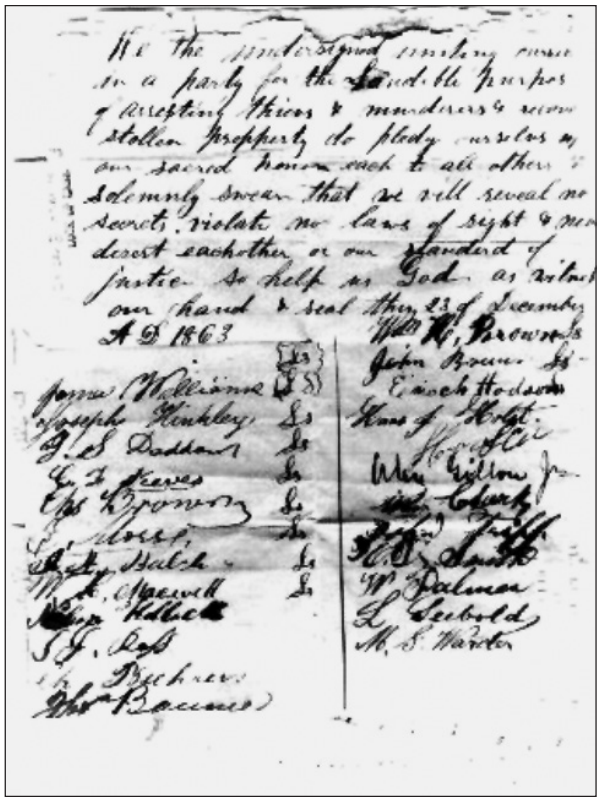
Questions that might be asked of the woman in the photo are: Does it take a lot of balance to stand on a horse, and is it hard? Was it a hot day? Why are you using an English-style riding saddle?



Documents

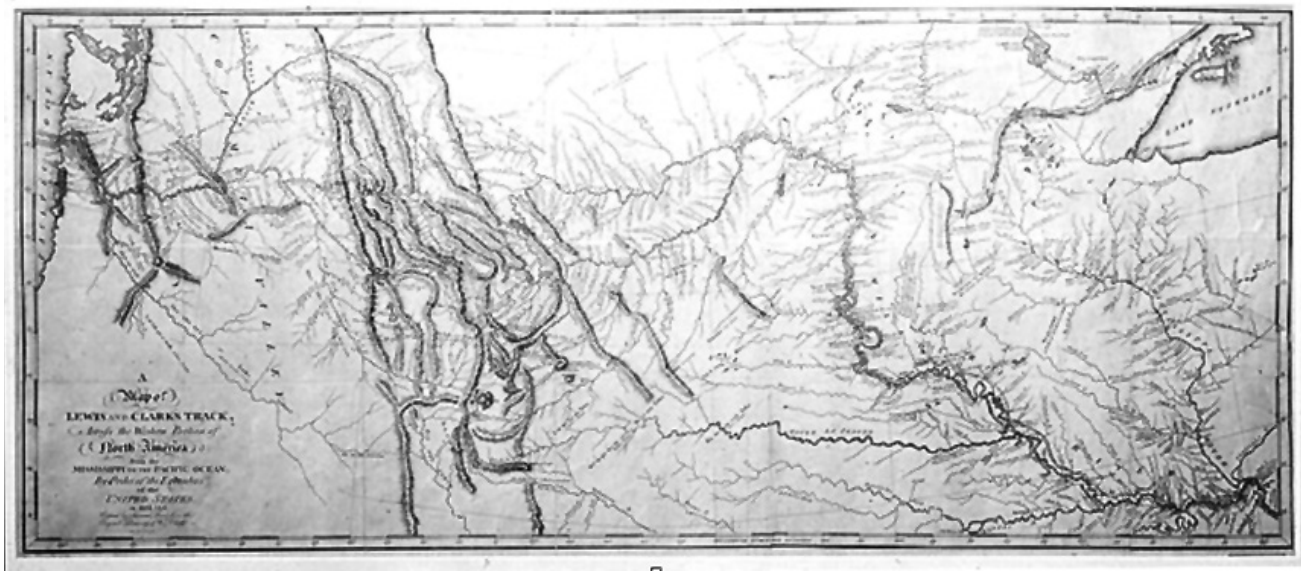
This document is part of the Montana Historical Society's archival collection. Reading the document can give us a lot of information: It is an oath pledging to catch thieves. It was signed by 23 men in December 1863. It mentions secrecy, so obviously this document was only meant to be read by the signers.

Further investigation tell us that this is the original Vigilante Oath signed by the Virginia City Vigilantes in 1863. The two things this document tell us about life in Montana in the 1860s are that there were lots of thieves in Virginia City and that traditional law enforcement was not enough so citizens formed a secret society to clean up their community.



Maps

This map is part of the map collection of the Library of Congress. Information that can be gathered from observing the map includes the following: The subject of the map is the northwestern region of the United States—west of the Mississippi River. The map is dated 1810 and was drawn by William Clark. The three things that are important about this map are that it shows that there is no all-water route to the Pacific Ocean, it documents the Rocky Mountains, and it shows the many tributaries of the Missouri River.



How to Look at an Artifact

(Adapted from the National Archives and Records Administration Artifact Analysis Worksheet)

Artifact: An object produced or shaped by human workmanship that is of archaeological or historical interest

1. What materials were used to make this artifact?

☐ Bone ☐ Wood ☐ Glass ☐ Cotton

☐ Pottery ☐ Stone ☐ Paper ☐ Plastic

☐ Metal ☐ Leather ☐ Cardboard ☐ Other _____

2. Describe how it looks and feels:

Shape _____ Weight _____

Color _____ Moveable Parts _____

Texture _____ Anything written, printed, or stamped on it

Size _____ _____

3. Draw and color pictures of the object from the top, bottom, and side views.

Top	Bottom	Side

(continued)

How to Look at an Artifact (continued)

3. Uses of the Artifacts

   a. How was this artifact used?_____

   _____

   b. Who might have used it? _____

   _____

   c. When might it have been used?_____

   _____

   d. Can you name a similar item used today? _____

   _____

4. Sketch the object you listed in question 3d.

5. Classroom Discussion

   a. What does the artifact tell us about technology of the time in which it was made and used?

   _____

   _____

   _____

   b. What does the artifact tell us about the life and times of the people who made and used it?

   _____

   _____

   _____

How to Look at a Photograph

(Adapted from the National Archives and Records Administration Photograph Analysis Worksheet)

Photograph: An image recorded by a camera and reproduced on a photosensitive surface

1. Spend some time looking at the whole photograph. Now look at the smallest thing in the photograph that you can find. What secrets do you see? _____

   _____

   _____

   _____

   _____

2. Can you find people, objects, or activities in the photograph? List them below.

   People _____

   _____

   Objects _____

   _____

   Activities_____

   _____

3. What questions would you like to ask of one of the people in the photograph?

   _____

   _____

   _____

4. Where could you find the answers to your questions?

   _____

   _____

   _____

How to Look at a Written Document

(Adapted from the National Archives and Records Administration Written Analysis Worksheet)

Document: A written paper bearing the original, official, or legal form of something and that can be used to furnish decisive evidence or information

1. Type of document:

   ☐ Newspaper ☐ Journal ☐ Press Release ☐ Diary

   ☐ Letter ☐ Map ☐ Advertisement ☐ Census Record

   ☐ Patent ☐ Telegram ☐ Other _____

2. Which of the following is on the document:

   ☐ Letterhead ☐ Typed Letters ☐ Stamps

   ☐ Handwriting ☐ Seal ☐ Other _____

3. Date or dates of document: _____

4. Author or creator: _____

5. Who was supposed to read the document? _____

   _____

   _____

6. List two things the author said that you think are important:

   a. _____

   b. _____

7. List two things this document tells you about life in Montana at the time it was written:

   a. _____

   b. _____

8. Write a question to the author left unanswered by the document: _____

   _____

   _____

How to Look at a Map

(Adapted from the National Archives and Records Administration Map Analysis Worksheet)

Map: A representation of a region of the earth or stars

1. What is the subject of the map?

   ☐ River ☐ Stars/Sky ☐ Mountains

   ☐ Prairie ☐ Town ☐ Other _____

2. Which of the following items is on the map?

   ☐ Compass ☐ Notes ☐ Key ☐ Name of Map-Maker

   ☐ Date ☐ Scale ☐ Title ☐ Other _____

3. Date of map_____

4. Map-maker:_____

5. Where was the map made: _____

6. List three things on this map that you think are important:

   a. _____

   b. _____

   c. _____

7. Why do you think this map was drawn? _____

   _____

   _____

8. Write a question to the map-maker that is left unanswered by the map.

   _____

   _____

   _____

Montana Historical Society Educational Footlockers

Architecture: It's All Around You— Explores the different architectural styles and elements of buildings, urban and rural, plus ways in which we can preserve buildings for future generations.

Cavalry and Infantry: The U.S. Military on the Montana Frontier— Illustrates the function of the U.S. military and the life of an enlisted man on Montana's frontier, 1860 to 1890.

Coming to Montana: Immigrants from Around the World—Showcases the culture, countries, traditions, and foodways of Montana's immigrants through reproduction clothing, toys, and activities.

Daily Life on the Plains: 1820–1900—Includes items used by American Indians, such as a painted deerskin robe, parfleche, war regalia case, shield, Indian games, and an educational curriculum.

Discover the Corps of Discovery: The Lewis and Clark Expedition in Montana—Traces the Corps' journey through Montana and their encounters with American Indians. Includes bison hide, trade goods, books, and more.

East Meets West: The Chinese Experience in Montana—Explores the lives of the Chinese who came to Montana, the customs that they brought with them to America, how they contributed to Montana communities, and why they left.

From Traps to Caps: The Montana Fur Trade—Gives students a glimpse at how fur traders lived and made their living along the creeks and valleys of Montana, 1810–1860.

Gold, Silver, and Coal—Oh My!: Mining Montana's Wealth— Chronicles the discoveries that drew people to Montana in the late 19th century and how the mining industry developed and declined.

Inside and Outside the Home: Homesteading in Montana, 1900–1920—Focuses on the thousands of people who came to Montana's plains in the early 20th century in hope of making a living through dry-land farming.

Lifeways of Montana's First People—Emphasizes the various tribal lifeways of the people who utilized the land we now know as Montana in the years around 1800.

Contemporary American Indians in Montana—Highlights the renaissance of Montana's Indian cultures and their efforts to maintain their identities and traditions.

Prehistoric Life in Montana— Explores Montana prehistory (10,000–12,000 years ago) and archaeology through a study of the Pictograph Cave prehistoric site.

Stones and Bones: Prehistoric Tools from Montana's Past— Uncovers Montana's prehistory and archaeology through a study of reproduction stone and bone tools. Contains casts and reproductions from the Anzick collection found in Wilsall, Montana.

The Cowboy Artist: A View of Montana History—Presents over 40 Charles M. Russell prints and hands-on artifacts that open a window into Montana history by discussing Russell's art and how he interpreted aspects of Montana history.

The Home Fires: Montana and World War II—Describes aspects of everyday life in Montana during the 1941–1945 war years. Illustrates the little-known government projects such as the Fort Missoula Alien Detention Center and Civilian Public Service Camps.

The Treasure Chest: A Look at the Montana State Symbols—Provides hands-on educational activities that foster a greater appreciation of our state's symbols and their meanings.

Tools of the Trade: Montana Industry and Technology—Surveys the evolution of tools and technology in Montana from late 1700s to the present.

Woolies and Whinnies: The Sheep and Cattle Industry in Montana— Reveals the fascinating stories of cattle, horse, and sheep ranching in Montana, 1870 to 1920.

Land of Many Stories: The People and Histories of Glacier National Park——Focuses on the commemoration of the centennial anniversary of Glacier National Park. It is thematically tied to the MHS exhibit *Land of Many Stories: The People and Histories of Glacier National Park.* It examines the human experience in the area now known as Glacier National Park, from pre-contact to the recent past, focusing on human-environmental interaction.