

# A HANDBOOK FOR TEACHING ARCHAEOLOGY IN SASKATCHEWAN SCHOOLS

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# CHAPTER 1: INTRODUCTION TO SASKATCHEWAN HERITAGE ONLINE AND THIS HANDBOOK

## **Introduction to Archaeology**

As the study of people through the ages, from the first human inhabitants of the earth to people in all parts of the world today, anthropology is a vast and fascinating topic of study. It seems that today, more than ever, we need to gain the perspectives that anthropology can provide in order to come to terms with the fact that our way of doing things is not the only way, nor is it necessarily the best way. By understanding how humans relate to each other and to their physical environment, we improve our ability to make responsible decisions that take into account the consequences of our actions on our environment and social relationships.

Archaeology is a subdivision of anthropology which deals specifically with the study of past human activity by finding, describing and explaining the materials that people have left behind. In these investigations, it is necessary to go to the site of the activity, uncover the evidence, gather all available clues, and finally interpret what activities occurred. Archaeology provides us with the perspective of change in human activity through time, and differences among groups of people.

## **Introduction to Saskatchewan Heritage Online**

Saskatchewan Heritage Online is an online interactive archaeology resource aimed at Saskatchewan primary and secondary school students and educators. Using recent advances in software and internet technology, the website is both dynamic and interactive. A web-based system has the added advantage of not being limited by differences in computer platforms or operating systems—anyone with an internet connection anywhere in the world can access the site and learn about Saskatchewan heritage.

The list of components in the website at this time include:

- 1) **Credits:** This acknowledges the role of project sponsors and provides links to

relevant local websites such as the Saskatchewan Archaeological Society and the University of Saskatchewan Department of Archaeology and Anthropology websites.

- 2) **Archaeological and Environmental Timeline:** The timeline contains a description of each archaeological culture in Saskatchewan and its place in time. The period covered spans from the initial peopling of the province following deglaciation through to European settlement of the late nineteenth century. Past environmental characteristics of each time period are also detailed.
- 3) ***A Handbook for Teaching Archaeology in Saskatchewan Schools:*** This online resource guide for teachers is in a downloadable and a cross-platform format. To download the file, click on the "Download Handbook" button on the title page.
- 4) **Interactive Excavations:** An excavation of an archeological site is included on the website. Using 3D modelling and real site attributes, an artificial site has been created as a teaching tool. This "virtual" excavation introduces students to the concepts and procedures behind a real archaeological site. Interactivity allows a "hands-on" approach to the project as students are given a tour through the various aspects of an excavation.
- 6) **Reconstructions:** Immediately after a site has been excavated and analysed, an archaeologist begins his/her interpretations of how the site was formed. Using the results of the "virtual" excavations, the past events at the site are reconstructed and illustrated. This provides a link for the students between the current understanding we have of the past and the raw data archeologists find in the field.

### ***Introduction to A Handbook for Teaching Archaeology in Saskatchewan Schools***

There are so many reasons to include archaeology in school curriculum, not necessarily as a separate course, but within existing core areas of study. Archaeology provides the subject matter for a wide variety of "hands-on" individual and group activities that stimulate student interest, independent learning, social interaction, and communication (see Chapter 6, in this volume). These exercises can also develop critical and creative thinking: from rudimentary levels such as classification, through making inferences and developing hypotheses, and finally to high level skills such as developing and testing alternative hypotheses, and using research results to develop broad generalizations about culture. The skills involved in archaeological research and interpretation include manipulation of numbers, graphing, and computer literacy. The multi-disciplinary nature of the subject makes it a useful umbrella under which a variety of required areas of study can be taught. Perhaps most importantly, archaeology is an exotic and fascinating subject for most people, and is capable of capturing even the imagination of students who might otherwise lack interest in academic pursuits.

This handbook is a general resource to assist Saskatchewan educators in preparing archaeological units of study for their classrooms, or in using archaeological concepts in existing units of study. It is divided into nine chapters, including this introduction, each containing different sources of information. Chapter 2 contains background information about archaeology, including an introduction to the subject and heritage legislation. In Chapter 3, the precontact and early historic periods of Saskatchewan are reviewed. Chapter 4 discusses archaeology as a career. Chapter 5 is a case study of how one archaeological site has been studied in Saskatchewan. Chapter 6 is a discussion of how archaeological themes can be integrated into a number of areas of study. In Chapter 7, ten different kinds of classroom and outdoor activities are described; these are suitable for a variety of grades and areas of study, reflecting the multi-disciplinary nature of archaeology. Chapter 8 is an annotated list of resource materials (some available locally) which could be used by teachers and students in their study of archaeology. Chapter 9 contains information about some of the different archaeological groups who do work with the public in Saskatchewan and abroad. And finally, Chapter 10 is a glossary of archaeological terms used throughout this handbook.

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Words that are included in the glossary are underlined the first time  
they appear in the handbook text.  
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## CHAPTER 2: ARCHAEOLOGICAL BACKGROUND INFORMATION

### INTRODUCTION TO ARCHAEOLOGY

Archaeology is the study of past human activity by finding, describing and explaining the materials that people have left behind. One of the most common misconceptions is that archaeology is the study of all ancient animal forms (for example, dinosaurs). In fact, those investigations are part of the science of palaeontology.

Archaeological research begins with choosing a problem. The problem can range from having to recover as much information as possible in a limited amount of time if a site is in danger, to wanting to test a specific theory about how people behave. Once a problem is identified, the archaeologist must decide where to do the research (the study area), and the best methods to use.

Before looking for archaeological materials in the study area, the archaeologist must obtain a research permit from the provincial government (see information on Community Support Services Branch - Heritage in Chapter 9). Because archaeological materials are protected by legislation, you need to have both a good reason for doing the research and the qualifications to carry out the research properly.

After much planning, the archaeologist is finally able to leave the office and do the most well-known part of the research—fieldwork.

### ARCHAEOLOGICAL INVENTORY

Unless the research problem requires the study of specific archaeological sites, the first part of archaeological fieldwork is to take an inventory of all sites in the study area. A site is a location which contains evidence that people performed some activity there in the past. Sites are recognized by finding artifacts and features left behind by people in the past.

An artifact is anything which has been made or changed by humans. However, many items, particularly those that have been used by humans but not changed, have an archaeological importance that is not easily recognized unless they are found

closely associated with other items or artifacts. For example, rocks in fields are common and not usually of interest to archaeologists; however, if an archaeologist finds 50 rocks arranged in a circle, this cultural feature provides a clue about the structures that people built at that site.

A site can be found in a number of ways. Often sites are discovered, perhaps accidentally, by ordinary people who then contact an archaeologist. But usually archaeologists look for sites. They survey by walking along lines, a set distance apart to that they get consistent coverage over the study area. While surveying, they look for artifacts or features on the ground surface, or in places where the subsurface is made visible, such as in rodent burrows or along the eroded banks of streams. To find buried sites, they may dig into the ground at regular intervals or in areas that seem likely to contain sites because of suitable vegetation or landscape.

## TESTING AND EXCAVATION

If sites are found during an inventory, they are marked on maps. Then they are tested (or assessed) to find out how important the site is—will it help answer the research problem? Assessment can involve collecting all of the artifacts lying on the surface of the field, and carefully mapping the location of each item. Or it may involve using shovels to dig a series of square test pits; these tests give the archaeologists an idea of how deep the site is buried, and if parts of the site remain undisturbed below the ground surface.

A site is only excavated if the assessment indicates that a site will be productive in archaeological materials that are important to the problem at hand. Archaeological excavation is a slow and careful process. Archaeologists carefully scrape soil away with pointed trowels or carefully manoeuvred shovels, and collect the soil in buckets. Artifacts are left in place for as long as possible, while dirt is brushed away from around them. They are only removed after the archaeologist has had a chance to observe the relationships among the artifacts in the area being excavated. The archaeologist dumps the bucket of excavated soil into a shallow box with screen mesh forming the bottom; the dirt falls through the screen and the archaeologist has one last chance to find the artifacts. Detailed notes are recorded at each stage of the excavation.

Excavation is an expensive and time consuming activity which involves destroying part of the site, and possibly destroying the information for which future archaeologists may be searching. Therefore, not every site that is discovered is excavated, and even sites which are excavated are rarely fully excavated. However, some archaeological sites are in danger of disturbance or destruction by natural processes (for example, erosion) or modern developments (for example, dam construction). It is necessary to study these sites in unusual detail because important information might otherwise be lost. To future archaeologists, access to the complete records and the

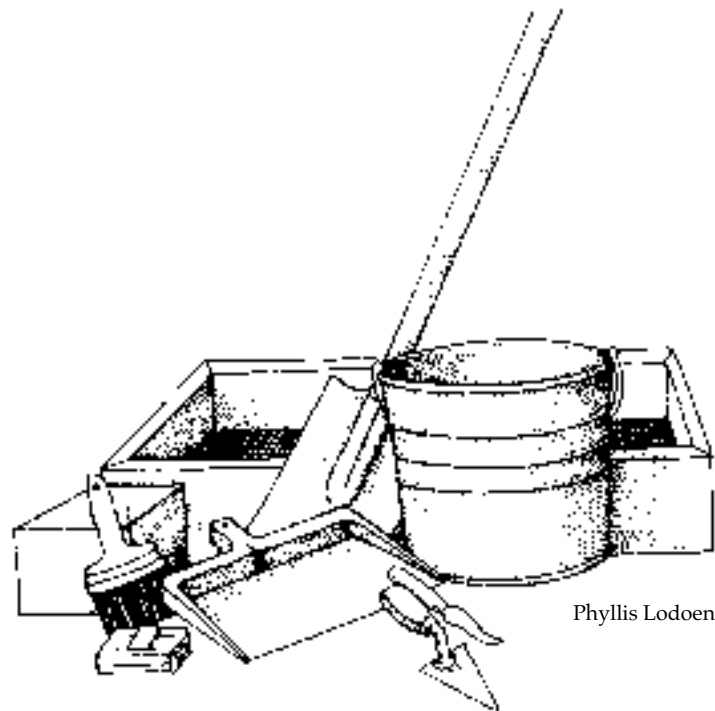


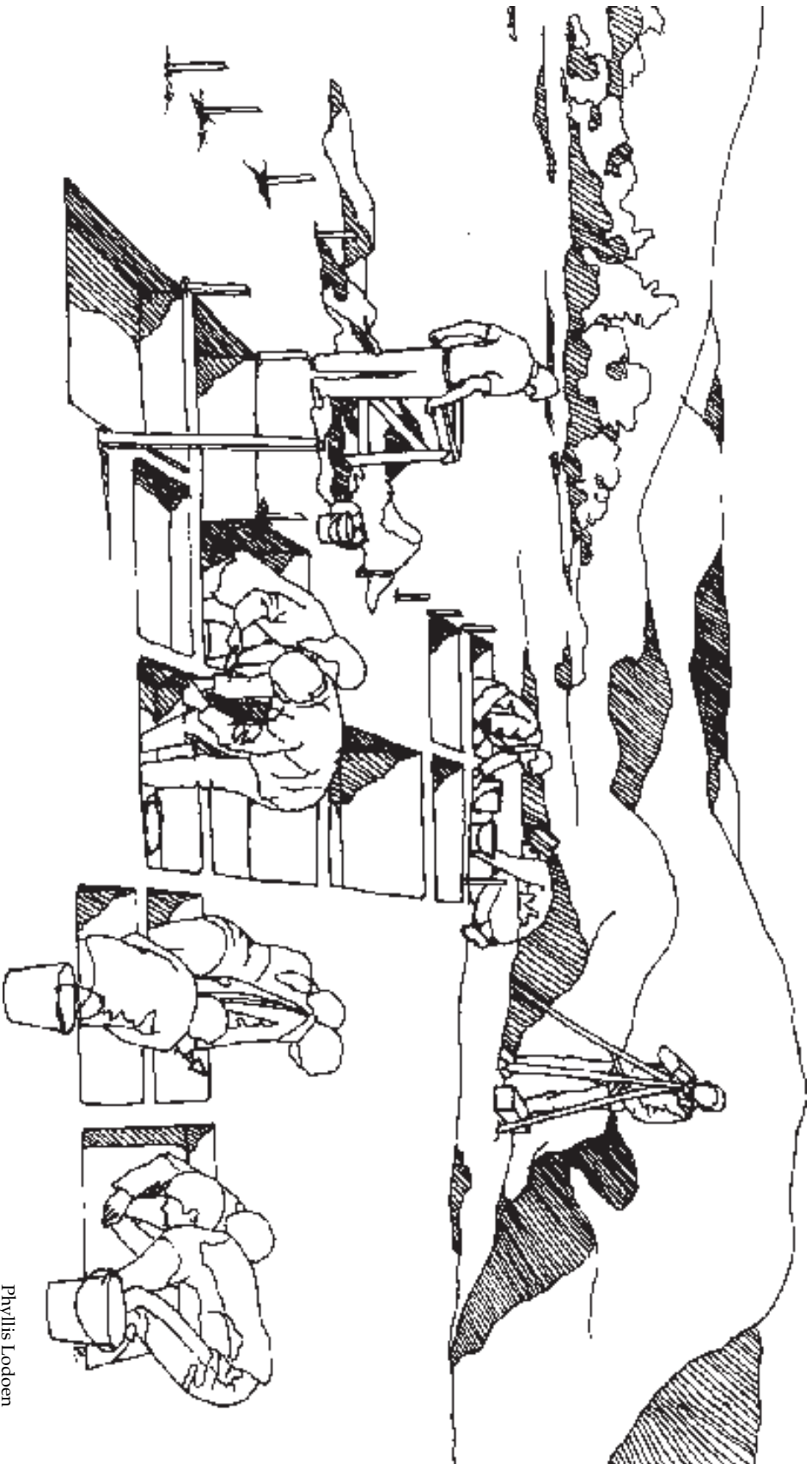
Figure 1: Some of the tools used in archaeological excavation

artifact collection from the excavation of a site is the next best thing to personally digging there.

## **RECORDING LOCATION AND CONTEXT**

Archeologists do not excavate in a random fashion. On the horizontal plane, they usually divide their site into a pattern of squares called a grid. One corner of the grid is the designated reference point, called the datum. Each square, or unit, of the grid is generally one square metre. Each unit is given two coordinate numbers indicating its position in relation to the datum (for example, unit 60N 85W would be the unit at the intersection of 60 m on the N-S axis and 85 m on the E-W axis).

The archaeologist digs in only one unit at a time. In order to interpret what people were doing at a site, and when they were there, archaeologists must keep records of artifact provenience—measurements indicating precisely where each artifact was found within a specific unit. Each artifact that is collected during excavation is placed in a bag labelled with all of the provenience information. In that way, archaeologists can reconstruct the site in the laboratory, by plotting artifact locations. By studying these plots, archaeologists can study how artifacts are associated in groups, and what those groups can reveal about human activity.



Phyllis Lodoen

Figure 2: Archaeologists excavating a site. Individuals work in square units set up in a grid arrangement. Dirt that is excavated is sifted through screens. The individual in the background is preparing to map the site with a surveyor's transit and tripod.

Recording an artifact's context—information about the soil and other artifacts around it—is also important in interpreting what activities occurred at a site. For example, if artifacts are found within ash, notes of that fact must be kept—the ash feature should be photographed and mapped (artifact locations noted and sketched). The ash itself is also an important clue to the human activities associated with the artifacts, and may be collected and process in the laboratory to retrieve tiny plant or animal remains. Another example would be a projectile point sticking into a bone: an important relationship could be overlooked if the artifacts were separated during excavation and no notes of their association kept.

Another aspect of the context of the artifact are the non-artifacts, also called the matrix, that surround the artifact. This material contains clues used in palaeoenvironmental (past environments) studies. The size of the sediment grains in the matrix can reveal whether the site was in an area that was flooded regularly, or whether it was in a low area where strong winds usually dropped their sediment load. When found in archaeological sites, seeds and pollen from plants can reveal the vegetation at the site and the surrounding area. In conjunction with the vegetation remains, the remains of small animals such as snails and insects can provide clues about the climate at the time that the site was occupied.

Archaeologists must also control the vertical scale of their excavations because the depth of artifacts in the soil is another important aspect of artifact provenience.

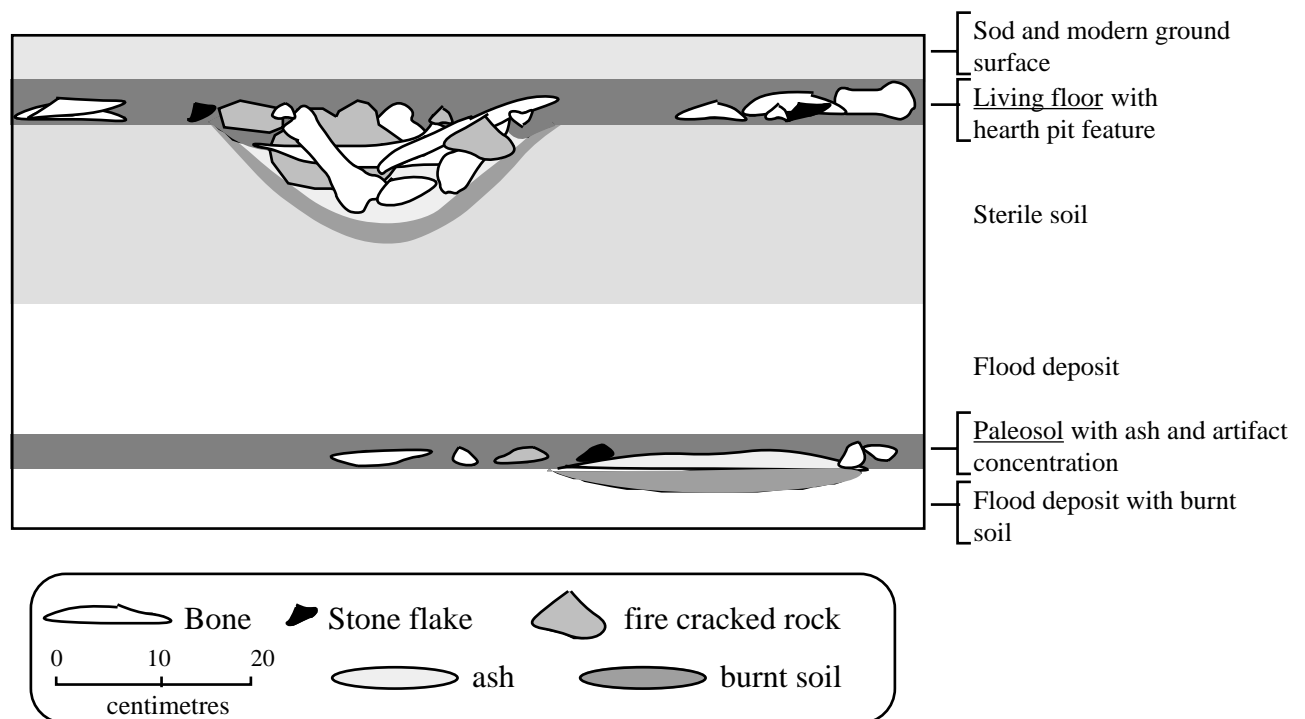


Figure 3: A drawing of the stratigraphy at an archaeological site showing two occupation layers separated by sterile soil.

The arrangement of the layers of sediment at a site is called stratigraphy (Figure 3). Stratigraphy is important in determining vertical relationships among artifacts. Artifacts found within the same soil layer, or strata, were all deposited at approximately the same time. On the other hand, artifacts found in different strata were deposited at different times, perhaps by completely different people. For that reason, archaeologists must excavate in layers—preferably in natural strata. If natural strata are difficult to identify, archaeologists excavate in arbitrary levels, in order to keep some control of depth and relationships among artifacts.

Notes about provenience and context are kept on level record forms (see Figure 4). These are standardized forms which are filled out for each level of each unit which is excavated. The forms have spaces for writing information about what unit was dug, how deep the level was, what was collected, and observations about the matrix, unusual associations of artifacts, and any other useful information.

## **DATING A SITE AND MATERIALS WITHIN A SITE**

There are a number of ways of finding out the age of archaeological materials. Relative dating is determining the age of something in comparison with something else excavated at the same site, rather than determining the age in years. The theory behind the most common form of relative dating is the law of superposition: sediments are deposited layer upon layer. Because artifacts are found within these strata, archaeologists apply the same law to them. If a site has not been disturbed, deeper artifacts were deposited by humans before the more shallow ones—that is, the deeper the artifact, the older it is. However, there is no direct relationship between the depth and the number of years since the rate at which sediments are deposited at a site is never constant. This type of relative dating cannot be used in comparing different sites, since the depositional rate at each site is unique due to the different natural forces at work. An absolute date, or the age of a site in years, is more difficult to determine.

Some materials such as bone or charcoal can be Carbon-14 dated. Radioactive Carbon-14 is present in the air in a fairly constant proportion to the non-radioactive Carbon-12. Plants and animals absorb carbon molecules into their cells when they breath, with a proportion of C-12 to C-14 equal to that found in the air. When the organism dies, the unstable C-14 decays into the stable C-12 at a very slow but known rate. The amount of C-14 remaining in an organic material can be measured and used to determine how many years have past since the plant or animal died.

Materials which have been heated to high temperatures (for example, pottery or fire-cracked rock) can be dated using a process called thermoluminescence (TL) dating. Minerals are exposed to natural radiation in the soil. As a result, these minerals give off light when heated, called TL. Heating to a high enough temperature erases all of the TL in the minerals. An object that was heated in the past is heated



again in the lab. The amount of TL given off is measured to determine the amount of radiation the object has absorbed from the soil since the original heating occurred. Soil samples must also be collected from around the object so that the background radiation can be measured. The TL given off by the object can then be translated into the approximate number of years that have elapsed since the original heating.

If there are no materials which can be absolutely dated in a site, dates can be approximated by comparing diagnostic artifacts such as projectile points or pottery to similar artifacts from sites at which absolute dates were obtained. This technique is called cross-dating. Artifact shapes illustrated in the timelines in Chapter 3 are diagnostic of particular time periods.

## AFTER EXCAVATION

The fieldwork of archaeological inventory, assessment and excavation are only a small part of the archaeologist's job. For every month spent in the field, about three



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Figure 5: An archaeologist working in the laboratory, cataloguing and analyzing artifacts.

months must be spent in the laboratory processing and analysing the information gathered (see Figure 5). In the laboratory, artifacts are cleaned and catalogued so that they can be permanently identified by number. Archaeologists study each artifact individually, taking measurements and making detailed descriptions.

For each site, archaeologists have a responsibility to write a report describing not only what was found, but also describing the environment and history of the study area, the research problems investigated, and the methods used. All of this information leads to conclusions about what the data reveal about human activity at the site. In order to draw conclusions about the data, the archaeologists must compare what they find to similar artifacts and features known from other sources. Important sources include other sites that have been excavated and people familiar with aspects of the group responsible for creating the site (for example First Nations Elders).

Thorough reporting of data and conclusions allows other archaeologists and members of the public to benefit from the knowledge obtained through the research. These reports are kept on file by Community Support Services Branch - Heritage within the department of Saskatchewan Municipal Affairs, Culture and Housing, and are sometimes adapted for more widespread distribution. When the site reports are completed, the artifacts and artifact records are sent to the Royal Saskatchewan Museum in Regina or another approved repository. There, they are stored, displayed or loaned to local museums. All artifact collections remain available for study by future researchers who have new questions to ask.

## FURTHER READING

More detailed information about the science of archaeology can be obtained by reading or viewing the following material. These resources are described in more detail in Chapter 8.

Archaeological Survey of Alberta

n.d. "Dig and Discover: Archaeological Excavation for the Classroom."  
An unpublished fact sheet.

Cable Regina and the Saskatchewan Archaeological Society

1988 "Discovering Saskatchewan's Past," various episodes in this video series.

Cork, Barbara and Stuart Reid

1984 The Young Scientist Book of Archaeology. Highgate Press, Usborne Publishing Ltd., London.

Epp, Henry T. and Ian Dyck

1983     Tracking Ancient Hunters; Prehistoric Archaeology in Saskatchewan. Saskatchewan Archaeological Society, Regina.

Fladmark, Knut R.

1978     A Guide to Basic Archaeological Field Procedures. Publication #4, Department of Archaeology. Vancouver: Simon Fraser University.

Hackwell, W. John

1986     Digging to the Past; Excavations in Ancient Lands. New York: Charles Scribner's Sons

Archaeological Resource Management

1991     Field Manual for Avocational Archaeologists. Community Support Services Branch - Heritage, Regina.

Hole, Frank and Heizer, Robert F.

1977     Prehistoric Archaeology: A Brief Introduction. New York: Holt, Rinehart, and Winston.

National Film Board of Canada and the Canadian Museum of Civilization

Digging Up Canada's History. A film strip series.

Robbins, Maurice and Irving, Mary B.

1981     The Amateur Archaeologist's Handbook (3rd edition). Cambridge: Harper & Row.

Royal Saskatchewan Museum

The Past in Place. A film.

Saskatchewan Archaeological Society

"Studying Saskatchewan's Ancient Human History." A slide show.

## **CHAPTER 3: THE PRECONTACT AND EARLY HISTORIC PERIODS IN SASKATCHEWAN**

Human history in the province of Saskatchewan has been greatly influenced by our environment. That environment has changed greatly over the past 12,000 years. Figure 6 shows modern vegetation in the province.

### **THE PRECONTACT PERIOD IN SOUTHERN SASKATCHEWAN**

This first section will deal with the precontact period in the plains and parkland areas of Southern Saskatchewan. It is based largely upon I. Dyck's summary in Epp and Dyck, 1984. A timeline illustrating the cultural sequences is presented in Figure 7.

#### **PLEISTOCENE HUNTERS PERIOD**

**(TO 10,500 YEARS B.P.)**

From the last advance of the glaciers until about 14,000 years ago (the exact date is uncertain), ice covered most of the Province and humans could not live here. Then slowly over the next 4000 years, the ice retreated northward and spruce forests and grasslands moved in from the south.

The end of the Ice Age, or Pleistocene epoch, is marked by the extinction of many species of large mammals such as mammoths, giant sloths, and camels. These extinctions take place about 11,500 B.P. At the same time, a human culture of big game hunters, known as Clovis, became established across much of North America. A continuing debate among archaeologists and palaeontologists is whether human hunting contributed to the extinctions. In Saskatchewan, the only evidence of these hunters are large spear heads that have been found on the ground surface.

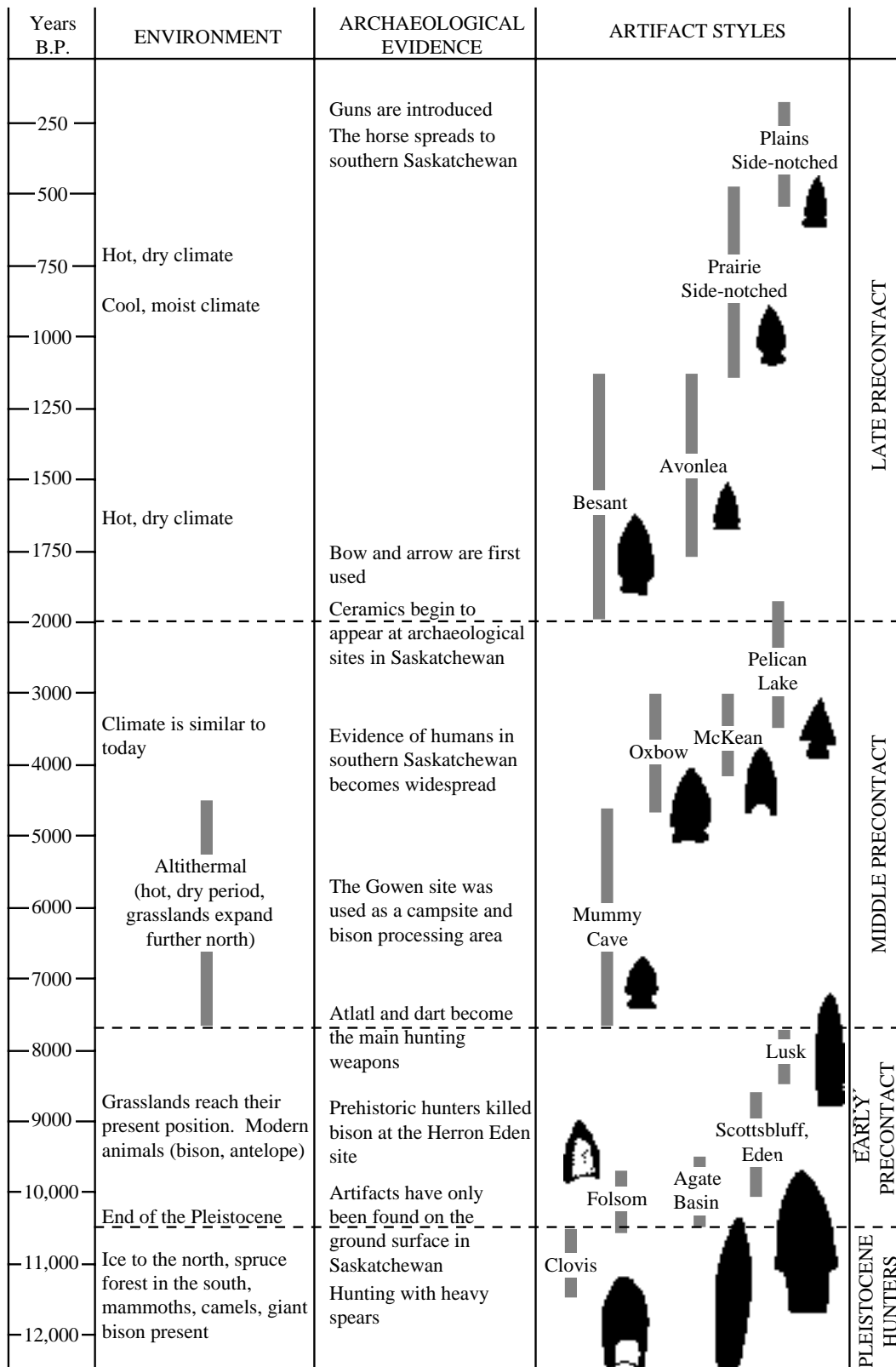
#### **EARLY PRECONTACT PERIOD**

**(10,500 TO 7500 YEARS B.P.)**

As the climate warmed, bison became the prominent animal in the plains environment. By about 9500 B.P., the grasslands reached their modern position near

Figure 6: A map of Saskatchewan showing the modern vegetation zones.  
These zones have changed significantly over the past 12,000 years.

Figure 7: Timeline for southern Saskatchewan.



Saskatoon and the climate was more like it is today. Humans adapted to their changing environment by becoming more specialized, hunting mainly bison on the grasslands. This hunting specialization lasted until historic times, although the hunting technology changed. Most of the archaeological cultures of the Early Precontact Period (such as Folsom and Agate Basin) are known at this time only from surface finds of unique projectile point styles and associated artifacts such as scrapers, knives, and fleshers; this makes it difficult to determine details of the lifestyles of the people.

There are only two known buried archaeological sites from this period. The Heron Eden site near Prelate was first tested in the summer of 1989. There, more than 9,000 years ago, people killed large bison (perhaps an extinct giant species) using heavy spears tipped with stone points called Scottsbluff and Eden. Details from this site will unfold in the years to come. About 8,000 B.P., another group of people using Scottsbluff technology camped at the Niska Site near Ponteix.

## MIDDLE PRECONTACT PERIOD

(7500 TO 1850 B.P.)

About 7500 years ago, the weather turned warmer and drier than today, and the grasslands extended about 100 km further north than their present position. During the driest and hottest periods, people probably had to take refuge in the parklands and other areas on the periphery of the plains. Sites in the heart of the plains are rare from this time period.

The atlatl and dart became the main hunting weapons during the Middle Precontact. The atlatl is a long wooden device with a hook on one end which acts as an extension of the arm; when a stone-tipped dart which is hooked into the end of the atlatl is propelled, it flies much further and with more force than would be possible with the human arm alone. Smaller projectile points, called Mummy Cave, tipped these darts early in the Middle period (7700 to 4700 B.P.). The Gowen Site (see the first article by E. Walker in Linnae and Jones, 1988) is a 6000 year old Mummy Cave habitation site and bison processing area located in what is now Saskatoon; it illustrates the success of the atlatl as a hunting weapon. The Norby Site in Saskatoon is a 5700 years old bison kill site. It was also from this period that the earliest evidence of humans in the area of Wanuskewin Heritage Park has been found, although earlier occupations may yet be discovered in the park (see the second article by E. Walker in Linnae and Jones, 1988).

By 5000 B.P., the weather was more moist, and was gradually becoming much like what we experience today. Sites representing a full range of human activities have been found all over southern Saskatchewan dating from this time onward. This indicates that human activity increased greatly at this time. The Oxbow style of projectile point (4700 to 3050 B.P.) is one of the most common styles found on the

plains; it is named after the site in southeastern Saskatchewan where it was first recognized. A separate group of points is found at sites which date from the same general time period as Oxbow—the McKean/Duncan/Hanna group (4150 to 3100 B.P.). Appearing during a time that was wetter than today, the culture named Pelican Lake (3300-1850 B.P.) is not as well known in Saskatchewan, although it is again named after a site in Saskatchewan; it is characterized by uniquely shaped, well made points and knowledge of bison jumping and pounding (corralling) techniques. These three archaeological cultures are also found up into the boreal forest (see “The Precontact Period in Northern Saskatchewan” which follows).

## LATE PRECONTACT PERIOD

(2000 TO 170 B.P.)

It should be noticed that this period overlaps slightly with the previous period. This is due to the arbitrary nature of this classification system. The Pelican Lake dart point style continued up to 1850 B.P., while a new style called Besant appears at 2000 B.P. The division between the two periods is marked by the appearance of pottery in Saskatchewan’s archaeological record with the Besant phase. These Besant style pots are generally conoidal shaped (see the Laurel pot in Figure 8), and made using a cord-wrapped paddle and an anvil.

Like projectile points, differences in pot shapes and designs is important in the study of time and cultural groups. By tracing similarities in style, it appears that pottery technologies may have been introduced to Saskatchewan from the east, where similar styles appear slightly earlier in the archaeological record. Pottery also allows some unique research opportunities, such as analysis of ancient finger prints to determine whether or not groups relied on specialists to make the majority of the community’s pots.

Some archaeologists choose to group Besant with the Middle Precontact Period because of the continued presence of atlatl dart points in Besant sites. By 1750 B.P., a new culture called Avonlea appeared, in which the bow and arrow had replaced the atlatl and dart as the mostly popular hunting weapon. The new weapon improved the ability of people to hunt, enabling them to stay hidden as they shot their prey, and allowing a greater degree of accuracy. Avonlea was first recognized at a site in Saskatchewan. Avonlea arrow heads are small, thin, and well made. The ceramics of the culture are similar in shape to Besant, but are decorated differently. Avonlea and Besant cultures coexisted in southern Saskatchewan until 1150 B.P.

The climate had several fluctuations in the last 1000 years, from severe droughts lasting several hundred years to moist warm climates. The drought conditions greatly affected the ability of agricultural peoples living in the Missouri area south of Saskatchewan to maintain their farming lifestyle. However, the people in

the Saskatchewan plains and parklands continued to be successful in their bison-hunting and plant gathering lifestyle. Prairie Side-notched points coexisted with and were succeeded by the more square-based Plains Side-notched points. The these later arrow heads are the most common style in Saskatchewan archaeological sites.

Even before Europeans arrived in the Province, their influence reached Saskatchewan through trading of goods among First Peoples groups. Horses filtered up from the south, and trade goods including guns came in from the east. These foreign influences forever changed the way of life in the plains and parkland. They increased the mobility of the Indians, their wealth (in some cases) and their ability to kill large numbers of animals. Many of the early historic descriptions of First Peoples groups were made after these changes had already taken place. Although archaeologists depend upon many of these historic accounts to find analogies for the materials they find in the archaeological record, they must take into consideration the vast changes that had already occurred. As Europeans came into the province, they also brought disease with them; epidemics of small pox devastated the First Nations peoples.

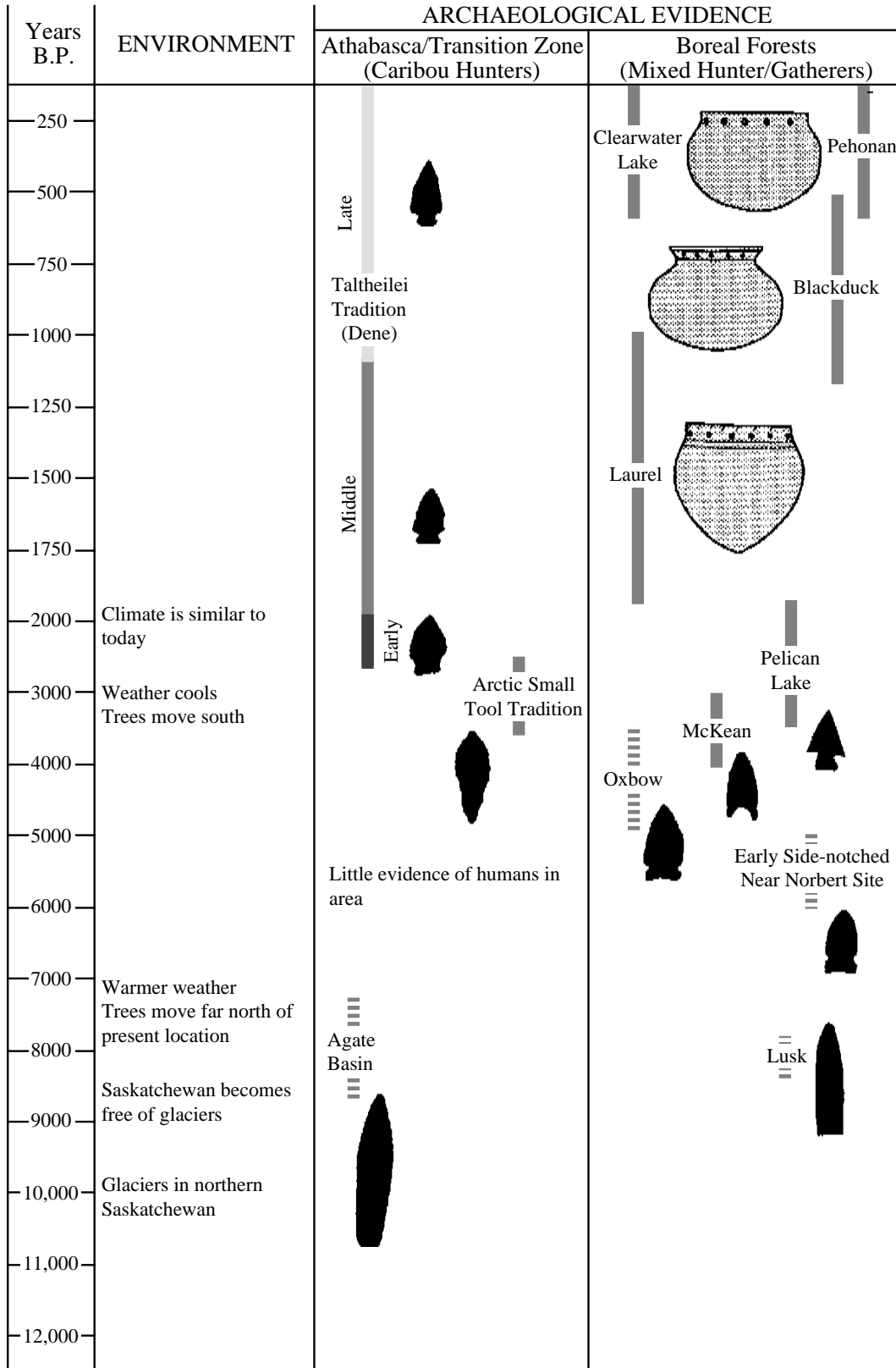
There has been a noticeable lack of precision in this discussion of First Nations peoples in the precontact period of Southern Saskatchewan. Movement of people and tribes has been common throughout human history on the plains. Correlating archaeological sites with particular First Nations groups is usually very difficult unless the sites are very recent.

## THE PRECONTACT PERIOD IN NORTHERN SASKATCHEWAN

Northern archaeology in Saskatchewan is still a new area of study. The area is so far from major population centers that industrial development has been limited, and little rescue archaeology has been necessary. The archaeological sites that are there generally contain very little organic material because the acid in the forest soils decays bone and wood very quickly. There is also little flooding or deposits of sediment, so most sites lie near or on the surface—stratified sites are limited to some river valleys and sand dune areas. The precontact period in the North is still not very well known, so the information below (largely taken from D. Meyer in Epp and Dyck, 1984) will be adapted as more research is done.

At the time of European contact, there were two groups of people in Northern Saskatchewan. The first were the Déné who relied upon caribou, and followed the caribou onto the tundra of the Northwest Territory in the summer and into the Athabasca and transitional forests in the winter. The second group were the Cree who lived in the boreal forests, relying on a wide variety of resources (caribou, moose, elk, mule deer, beaver, muskrat, snowshoe hare, waterfowl, grouse, fish), mostly near northern lakes and rivers. This division of northern peoples seems also to apply to precontact times (Figure 8).

Figure 8: Timeline of the precontact period in northern Saskatchewan.



## **ATHABASCA/TRANSITION FORESTS**

This is the area in Saskatchewan from the Churchill River northward. Although Saskatchewan was ice-free by 8500 B.P., the first people in the north arrived between 7000 and 8000 years ago. Their culture, called the Agate Basin complex, is known from a very few spear points found in the far north of the Province—an area which would have been within the winter range of the barren ground caribou. These points are similar to ones used earlier in southern Saskatchewan to hunt herds of bison, but it is not clear whether it was the people who moved north, or just their hunting technology.

As the climate warmed, the tree line moved far north of its present location, and barren ground caribou would rarely have entered the province. This is probably the reason that no evidence has been found of human occupation in Northern Saskatchewan during the cultural period (6000 to 3500 B.P.) which has been named the Shield Archaic where it occurs further north and east.

About 3500 B.P., the climate began to deteriorate, which resulted in the tree line moving south, the caribou wintering well within Saskatchewan, and early Inuit people moving south to hunt the caribou. The artifacts of this period, representing the Arctic Small Tool Tradition, are completely different from artifacts from southern Saskatchewan, and include finely crafted crescent-shaped blades, and projectile points which are pointed at both ends. Most of these sites have been found around Lake Athabasca.

By 2600 B.P., the area was inhabited by people who appear to be ancestors of the Athapaskan groups who reside in the area today. These people, represented in the archaeological record by artifacts of the Taltheilei Tradition, used projectile points with notches near the base. The archaeological evidence suggests that these people centered their lives upon the herds of barren ground caribou, hunting with notched projectile points that were often made of bone.

## **BOREAL FOREST**

This is the area in Saskatchewan from the Churchill River south to the parklands. The people in this area were greatly influenced by the plains and parklands cultures to the south and the forest peoples to the southeast. No evidence of early precontact cultures have been found in the area.

The earliest materials that have been found in the area are along the Churchill River at the Near Norbert Site, which have been assigned to the Early Side-notched Tradition. These materials are probably close to 5000 years old and are very similar to projectile point styles on the plains. Since the parkland extended further north at

this time, it is not surprising that some southern peoples travelled up the Churchill River system and discovered the riches further north.

Oxbow points like the ones common in the plains from 3500 to 5000 B.P. have been found along the Churchill and Clearwater Rivers and near La Loche. Exact dates for the northern Oxbow sites have not been obtained because of a lack of datable materials. Copper artifacts, traded from people in the Great Lakes region to the east, are found in sites from this period. Plains points (McKean and Pelican Lake styles) from succeeding periods are also found in the area.

The next major culture is called Laurel, and it is found in the eastern part of the area. It originated in an area to the southeast, in western Ontario, southeastern Manitoba, and northern Minnesota. In those areas, it dates from 2100 B.P. to 1000 B.P. This culture is identified by the presence of a collection of different artifact types: conoidal ceramic pots that were made using the coiling technique and decorated with tool impressions, stemmed and notched projectile points, and harpoons. In the areas of Boreal forest not occupied by Laurel peoples, a northern expression of the Besant culture is present.

Blackduck is the next cultural tradition found occasionally in the eastern boreal forest of Saskatchewan which has its origins further southeast. The main characteristic of this tradition is another unique style of pottery, with globular pots (round with rounded bottom) with a heavily decorated small neck and flaring rim. This culture dates from about 1150 - 550 B.P., and is also associated with small points and tubular smoking pipes.

The Clearwater Lake culture is found across boreal forest area dating from about 600 B.P. Again it is recognized by a unique pottery style similar in shape to Blackduck but with different rim shapes and decorations. Other artifacts are also similar to Blackduck, but the assemblage also includes ground stone adzes (blades with the cutting edge at right angles to the handle, used in wood work such as canoe manufacturing). The rock paintings drawn on outcrops along the Churchill River are thought to date from this period. This culture is thought to be directly ancestral to the modern Cree.

Dating from the same time, the Pehonan culture is one which combines characteristics of the Clearwater Lake and southern Plains Side-notched cultures. Although the Pehonan pottery is similar to Clearwater Lake, it is often slightly different in shape and has decorations more like Plains pottery; the arrow heads at Pehonan sites are also like the Plains Side-notched ones. Bushfield West, near Nipawin, is a characteristic Pehonan site which dates to about 350 B.P. Pehonan may be the archaeological representation of Cree who wintered in the parklands and came in contact with southern tribes.

## HISTORIC PERIOD

### (260 B.P OR 1691 A.D. TO PRESENT)

Traditionally, the boundary between prehistory and history has been marked by the arrival of the first Europeans who kept written records of their activities in Saskatchewan. In this handbook, precontact has been used to refer to the period and peoples before the arrival of Europeans. Because this contact occurred at different times in different parts of the province, and because the early records are not continuous, it is difficult to place a firm date on the beginning of the Historic Period. The first description is by Henry Kelsey, who visited the Touchwood Hills in 1691. More continuous records do not begin until 1754 when the Hudson's Bay Company began to send employees inland from York Factory winter with the Cree. In 1774, the first continuously occupied fur trade site was established at Cumberland Lake (although temporary posts were built as early as 1751). Away from the major fur trade and explorer routes, some areas do not appear in historic records until the early 1900s, by which time European settlers and missionaries were present in most parts of the province.

In the archaeological record, the historic period is marked by the appearance of large quantities of European goods at archaeological sites. Some historic archaeological sites were inhabited by Europeans (such as fur trade posts and early homesteads) while other sites were inhabited by descendants of the precontact peoples, who were interacting with Europeans. Some European trade goods filtered into the province with the establishment of fur trade posts on the western part of Hudson's Bay in 1682 (not always through direct trade with Europeans but more often through trade among the First Nations groups); trade goods became more frequent as fur trade posts became established in Saskatchewan.

Historical archaeology fills in the story of Saskatchewan's past by revealing information about everyday events and people that are often left out of written histories. It differs from precontact archaeology in the availability of written records as another source of information. The fur trade, Northwest Mounted Police, early Métis lifestyles and the resistance of 1885, early homesteading, and even the industrialization of the 20th century are illuminated in a new light when archaeological sites from these periods are investigated.

## FURTHER READING

More detailed information about the precontact and early historic periods in Saskatchewan can be obtained by reading the following material. These resources are described in more detail in Chapter 8.

- Bryan, Liz  
1991      The Buffalo People. The University of Alberta Press, Edmonton.
- Epp, Henry T. and Ian Dyck  
1983      Tracking Ancient Hunters; Prehistoric Archaeology in Saskatchewan. Regina: Saskatchewan Archaeological Society.
- Helgason, Gail  
1987      The First Albertans. Edmonton: Lone Pine Publishing.
- Linnamae, Urve and Tim E. H. Jones (eds.)  
1988      Out of the Past. Saskatoon: Saskatoon Archaeological Society.
- McGhee, Robert  
1989      Ancient Canada. Canadian Museum of Civilization, Ottawa.
- Saskatchewan Archaeological Society  
"Studying Saskatchewan's Ancient Human History." A slide show.



## **CHAPTER 4: CAREERS IN ARCHAEOLOGY**

### **ASPECTS OF THE JOB**

Archaeology involves two general types of work. For two to six months of every year, most archaeologists participate in fieldwork. Because sites are usually situated in distant areas, fieldwork often temporarily takes archaeologists away from their families and friends. Fieldwork demands that a person enjoy physical outdoor activity. Not only is the nature of archaeological fieldwork physical, but the sites are often very remote, and may require the archaeologist to walk or canoe long distances and camp in primitive conditions. Working and living in close quarters with a crew also demands that an archaeologist be easy-going and considerate of others.

Archaeologists spend most of the winter months in the laboratory or office. Our climate makes outdoor work difficult in the winter, and the analysis of archaeological artifacts and site information usually takes much longer than does the gathering of the data in the field. Even the preparation for yearly fieldwork—library and archival research and making logistical arrangements such as seasonal staff hiring and facility rentals—takes a lot of work. In both winter and summer, an archaeologist must also have a great deal of patience in order to conscientiously complete the often repetitive tasks involved in finding and analysing artifacts.

### **ARCHAEOLOGICAL SPECIALIZATIONS**

No archaeologist is capable of being an expert in all aspects of the field. The smaller the area of specialization, the easier it is to gain a comprehensive knowledge of the subject and keep abreast of developments in the field by other archaeologists.

Most archaeologists specialize in a certain area of the world, or a certain time period. All classical archaeologists, for example, study the civilizations in the Old World. However, each would specialize further and study a more limited subject such as Pre-dynastic Egypt.

Some archaeologists specialize in the analysis of one particular category of artifact, although they must have a familiarity with a wide range of artifacts. Zooarchaeologists, for example, specialize in the analysis of animal remains at archaeological sites, and can determine not only the species of animals, but often their

sex, age, and physical condition. Lithic analysts study stone artifacts, determining what kind of rock was used, where it came from, how the tool was made, and what it was used for.

Some archaeologists are more involved with writing reports, and rarely get a chance to examine the artifacts. They must pull together all of the information about the site, its artifacts, and their distributions within the site. Then they must interpret what human behaviour was involved in creating the patterns seen in the archaeological record.

In attempting to interpret the human behaviour represented in the archaeological record, some archaeologists rely on experiments which attempt to reproduce the patterns observed in archaeological artifacts or sites. This specialty is called experimental archaeology.

Archival research demands a familiarity with libraries and archives, and their wide range of literature sources and historic documents. It is necessary to provide archaeological projects with historical background.

Palaeoenvironmental studies are now an integral part of most large archaeological projects. However, the specialized knowledge necessary to identify and interpret clues such as pollen grains is far beyond the capability of most archaeologists.

Computer applications are also becoming essential for cataloguing and organizing archaeological data, and helping to recognize patterns in that data. Some archaeologists specialize in creating computer applications which are personalized for the special needs of each project.

Public education is a growing specialization of archaeology in Saskatchewan. If archaeologists only talk to each other, their research is of very limited value. Opening sites up to visitors, working in museum settings, and writing for a general audience allow archaeologists to spread the news of their discoveries.

The manager of each archaeological project must assemble teams of these specialists to work together. Each person's knowledge contributes to greater understanding of the archaeological record.

## EDUCATIONAL REQUIREMENTS

Although the choice of specialization has much to do with the course of training required, and the employment opportunities that will result, all archaeologists must first obtain a bachelor's degree from a university. Therefore, a matriculation program in high school, with a strong background in a variety of social sciences and sciences, is essential. Archaeology is usually considered a subdiscipline of Anthropology in Canadian universities, but occasionally is a separate discipline and its own

department. Prospective archaeologists should therefore enrol in a four-year program in Anthropology or Archaeology. Specific courses depend upon the interests of the students. In addition to the Archaeology courses, a wide variety of Arts and Science courses are useful to the job.

Although technical jobs in archaeology (excavation or cataloguing and analysing artifacts, for example) usually require a minimum of a B.A. degree, competition for jobs is often stiff. In addition, in most Provinces, only people who hold at least a Master of Arts or Science degree in Anthropology or Archaeology can obtain permits to carry out independent field projects. Therefore, any student considering a full time career in archaeology is advised to obtain a M.A., which takes an additional 2 to 4 years to complete.

Archaeologists wishing to find long-term employment in Universities, some government departments, or museums should continue in their education to obtain a PhD in Anthropology. In order to receive this degree, a student must prove that he/she has the ability to make important and unique contributions to the field of archaeology. A PhD usually takes 4 to 7 years to complete.

At some universities (including the University of Saskatchewan), students interested in Classical Archaeology can take their training through the Anthropology/Archaeology department, with additional courses from the Department of Classics. However, many universities teach Classical Archaeology directly through the Department of Classics. Classical Archaeology job opportunities are usually in university and museum settings.

## **JOB OPPORTUNITIES**

Archaeologists usually gain employment in the following arenas: consulting companies and research groups (for example, Western Heritage Services), universities, Provincial and Federal Government departments (for example, Community Support Services Branch - Heritage in the Saskatchewan government, Canadian Parks Service), and museums (for example, Royal Saskatchewan Museum in Regina, Canadian Museum of Civilization in Hull).

Unfortunately, the job opportunities for archaeologists are fairly limited. Many of the jobs are with consulting groups that specialize in doing research associated with proposed land developments. Because of the nature of the research, the number of positions available fluctuates with the general economic climate. These jobs are often short term, because the projects are generally small in scale and unpredictable in availability. Competition for more permanent jobs is often fierce, but for those dedicated to the subject, jobs can usually be obtained.

Outside of the university setting, archaeological research depends mainly

upon public support. This funding can be through government grants, or through legislation that requires private companies to pay for studying sites that are endangered by proposed developments. Active lobbying by members of the public is largely responsible for the heritage legislation that currently protects archaeological resources in the province. It is only through continued public support that the quality and quantity of archaeological research in Saskatchewan can be maintained and perhaps grow.

## **FURTHER READING**

More detailed information about archaeology as a career can be obtained by reading the following material. These resources are described in more detail in Chapter 8.

Archaeological Survey of Alberta

1989 "Archaeology as a Career." An unpublished fact sheet.

Cable Regina and the Saskatchewan Archaeological Society

1987 "Discovering Saskatchewan's Past."

The first two episodes of this video series in particular deal with archaeology as a science and a profession.

## CHAPTER 5: AN ARCHAEOLOGICAL CASE STUDY

### AN INTRODUCTION TO BUSHFIELD WEST

Bushfield West is one of the most interesting precontact sites ever studied in Saskatchewan. Archaeologists from the Museum of Natural History discovered the site in the early 1960s on a floodplain of the Saskatchewan River, near the town of Nipawin. While studying the Francois Finlay fur trade post, they noticed a scatter of bone and stone tools on the surface of the neighbouring ploughed field.

### ASSESSMENT OF THE SITE

In 1976, the site was revisited by a group of archaeologists from the Saskatchewan Research Council (SRC). They were in the area to find and study the archaeological sites that would be affected by a hydroelectric development sponsored by the Saskatchewan Power Corporation (SaskPower). The archaeologists collected artifacts lying on the surface of the field, carefully mapping the location of each item. They also used shovels to dig a series of square test pits. These tests gave them an idea of how deep the site was buried, and if any parts of the site remained undisturbed below the plough zone. This assessment of Bushfield West indicated that much of the site was undisturbed and had great potential for revealing the cultural history of the area. The archaeologists therefore recommended that more research be done at the site.

By 1982, it was known that the building of Francois Finlay hydroelectric dam would result in the flooding of Bushfield West. Archaeologists from the SRC were hired by SaskPower to revisit the site. They planned to thoroughly test the site and excavate large blocks in order to retrieve as much information as possible.

The SRC archaeologists divided the site with a grid. Along each grid line, they excavated 50 x 50 cm test pits spaced 12 m apart. These tests were supposed to indicate the size of the site and patterns in the arrangement of artifacts. The test pits were excavated in levels which corresponded to the natural stratigraphic layers in the soil.

The stratigraphy at Bushfield West was uncomplicated. The plough zone (Level 1) was 8 to 15 cm thick. Below that was a thin level of grey sand (Level 2) that was deposited when the river flooded. Below the sand was a black layer 3 to 6 cm in

thickness that was identified as a palaeosol (Level 3). As is the case at Bushfield West, these dark coloured soil layers often contain evidence of human activity.

Test pits were dug well below the palaeosol, to make sure that no deeper levels containing artifacts were present. Artifacts were collected in bags that were labelled with the test pit coordinates and the stratigraphic level in which the artifacts were found.

The assessment confirmed that most of the artifacts at Bushfield West rested on the surface of the easily recognized palaeosol, except in areas where the palaeosol had been mixed with the upper soil layers through ploughing. The site covered an area of 1.5 hectares, with the evidence of human activity concentrated in certain places.

## EXCAVATION OF THE SITE

The methods used in excavating Bushfield West took advantage of the knowledge gained in the assessment. Because the artifacts were limited to a thin layer, the original ground surface upon which people lived—the living floor—could be uncovered in large blocks to study how artifacts were distributed across the site. Areas were chosen for excavation because they had contained interesting artifacts or features in the assessment. In order to compare differences in activities from one part of the site to another, the archaeologists excavated in large blocks of neighbouring 1 x 1 m units that were aligned with the site grid.

At Bushfield West, the excavation methods were chosen to recover as much useful information as possible. The top levels of soil could be shaved off with shovels and discarded because the assessment indicated that they were essentially sterile. As the excavation neared the level of the palaeosol, shovels were exchanged for trowels for more careful digging. After using paint brushes to remove the last soil from around the artifacts on the living floor, each 1 x 1 m unit was sketched and photographed. Then the palaeosol level, including the artifacts, was excavated. All of the contents of each 50 x 50 cm block of living floor was collected in a bag. This process is different from the standard practice of collecting only the artifacts and sifting the dirt before discarding it. Each bag was labelled with the appropriate coordinate numbers indicating the location of the unit.

In the laboratory, archaeologists sifted each bag through window screen (2 mm mesh). Those items that were too large to pass through the screen were sorted, removing the non-artifacts and dividing the artifacts into different categories for analysis. The result of using these excavation methods is that archaeologists were able to discover and analyse thousands of tiny artifacts and seeds that would normally have been overlooked in excavations, and which would have fallen through screens with larger mesh.

## RESULTS AND INTERPRETATIONS

The information gathered from Bushfield West is impressive. By the end of the 1984 field season, a total of 624 m<sup>2</sup> had been excavated. Through excavations and tests at the site, archaeologists collected approximately 250,000 artifacts. Terry Gibson, an archaeologist now with Western Heritage Services, Saskatoon, had the responsibility of making sense of all of this information.

With so many artifacts found, it was necessary to use a computer cataloguing system to organize the information. The system is a database, with each record representing a single artifact or a group of similar artifacts found within the same level and unit. Within each record is a series of fields which contain information about precisely where the artifact was found, and a complete description of the artifact—its weight, size, the material from which it was made, and what it is thought to be. Below are some examples of what was found at Bushfield West and how it was interpreted. These illustrate the kinds of questions that can be answered using archaeological information.

Artifacts were often clustered around hearths. Remarkably, many of these hearths and associated artifact clusters were completely surrounded by sterile soil. This lack of loosely scattered artifacts suggests that the site was flooded soon after the occupation, capping the remains and protecting them from disturbance.

An example of this kind of clustering, and Terry Gibson's interpretation of the activities represented, is illustrated in Figure 9. The clusters of artifacts around a hearth suggest activities that were associated with a round dwelling, although no remains of the actual structure were found. On the east and southeast sides of the hearth, large numbers of stone flakes and cores from which those flakes were removed indicate that stone tool manufacturing was the most important activity around the hearth. The analysis of bone, burnt bone and pottery pieces indicate that bison was probably cooked in a pot, and young beaver was roasted over the fire.

Spills of ochre (iron oxide) and grinding tools for making the ochre into paint found near the hearth, indicate that paint was made there and perhaps used in ceremonial activities. Two small trash dumps were at the edge of the dwelling, with pottery sherds discarded in the southwest corner, and bone, flakes, and broken tools thrown in the northwest. Because the area to the west of the fire was clear of artifacts and its living floor surface was unusually compacted, it appears that the area had been kept clean for sitting or sleeping, which after an extended time had compressed the soil.

The archaeological evidence has also revealed some general information about the site. Pollen recovered from the palaeosol has been analysed and indicates that the floodplain upon which Bushfield West sits was covered with birch trees at the time of occupation. Radiocarbon dates of bone and charcoal indicate that the site was about

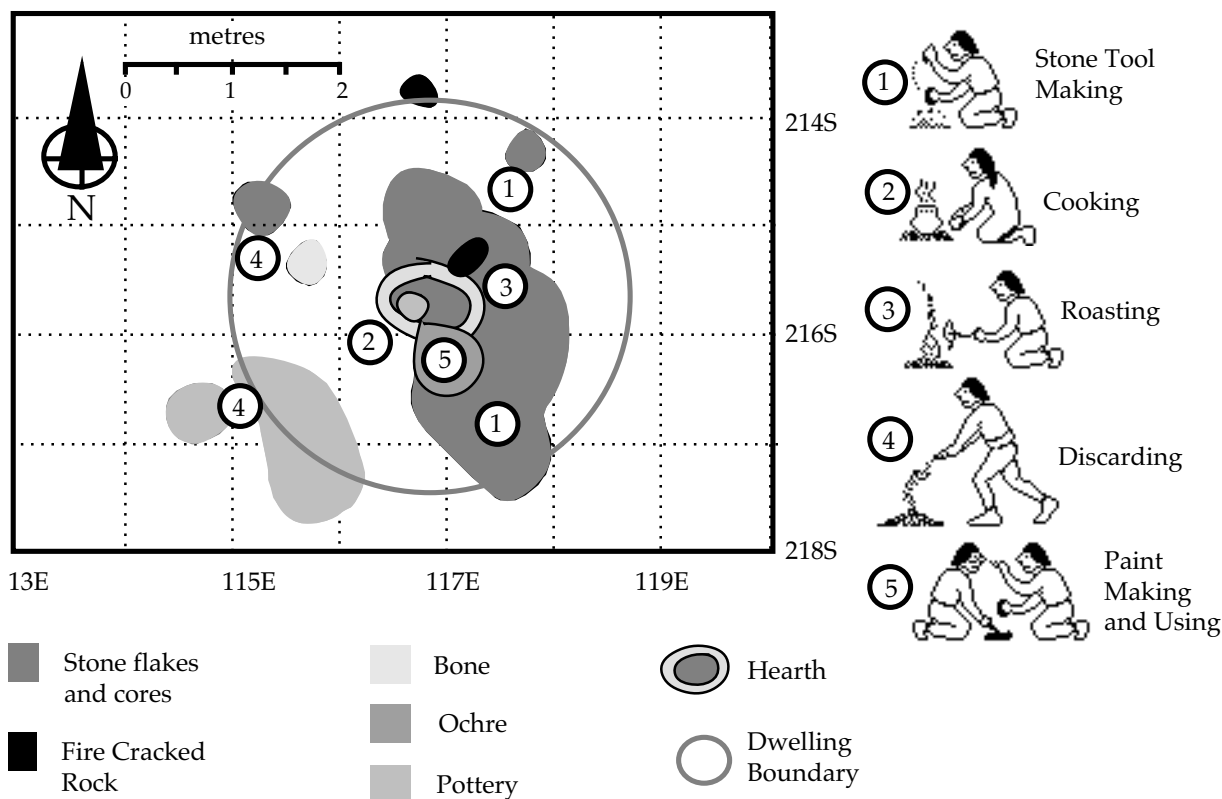


Figure 9: The clustering of different kinds of artifacts around a hearth in Block 3 at Bushfield West.

400 years old. The pottery from the site is of a style associated with the Pehonan culture. The thickness of the artifact layer suggests that the site was revisited for a number of years. Because analysis revealed the presence of foetal bison and immature beaver bones, and the presence of egg shell, it seems likely that the site was visited in the spring. The presence of exotic marine shell, rare native metals, and uncommon rock types suggests that the occupants of Bushfield West were involved in precontact trade over long distances. The activities represented in artifact clusters indicate that the site was a multipurpose campsite, in which a variety of cooking, butchering, tool making, and ceremonial activities took place.

## CONCLUSION

Bushfield West now lies under approximately 30 metres of water in the Nipawin Reservoir. But thanks to the careful work of archaeologists, much of the valuable information that the site contained has been preserved. The site report, artifacts and the computer database will provide future archaeologists with the information needed to answer almost any conceivable question.

## CHAPTER 6: ARCHAEOLOGY AND CURRICULUM

### REQUIRED AREAS OF STUDY

This section will explore how archaeological ideas can be introduced for a number of required areas of study. This is not meant to be a progressive curriculum, with each year based upon the previous years' teachings. Rather, it is meant to provide a wide range of ideas for fitting archaeology into the curriculum, because of the interests of the teachers, the interests of the students, or to take greater advantage of opportunities for class involvement in archaeological research.

By suggesting ways in which archaeological themes can be introduced through the existing Sask. Ed. curriculum, this section will explore how archaeology can tie together various required areas of study into one integrated unit (see Devine 1989). It also provides suggestions for integrating the subject matter of archaeological field trips into regular curriculum, ensuring that maximum benefit is achieved through the out-of-school experience, should the opportunity arise. The curriculum for Saskatchewan schools is undergoing a major revision, so some of the specific suggestions for integrating archaeology may be out of date within a few years. However, the suggestions will indicate the wide applicability of archaeology. The concepts and activities that are introduced in this section are independent, and do not require that archaeology has been the subject of previous years' or previous classes' study.

#### Social Studies

In social studies, archaeology should be introduced as an important method of gathering information about the past, information about everyday events and people that were often left out of written histories. That is why historic as well as precontact sites are studied by archaeologists. During any class discussions of past historical events and different cultures, archaeological reflection can be practiced as a means of practicing critical and creative thinking:

- What kinds of materials would be left behind after such an event?
- Which of these would survive after several hundred years of abandonment?
- What would be unique about the materials that would give archaeologists clues about the time that the event occurred, and what people were involved (male or female, culture or nationality, status of participants within their culture)?

What aspects of this culture would distinguish it from all others in the archaeological record?

What information could you retrieve from the archaeological record about this [kinship system, religion, language, economic system, political system, modes of transportation, food production, or world view]?

### Science

Archaeological ideas can be introduced in science classes at all levels from grades 1-12. It provides suitable material for covering most of the factors in the Dimensions of Scientific Literacy which form the backbone of the new curriculum.

Because living things adapt to their environment and to seasonal changes in their environment, archaeologists can sometimes determine what season people visited an archaeological site? (see seasonality in glossary).

Ecological concepts, geography and geology, are all integral to archaeological research. But probably its biggest contribution to pre-university students is the ease with which it can be used to get students involved in the procedures of scientific investigation (observation, measurement, classification, experimentation, communication, formulating hypotheses, formulating theories and models and making predictions using analogies). It can introduce them to the "scientific point of view" which guides this investigation (including the belief that the world is ordered and can be understood, that there are many methods for investigation, and that attitudes such as open-mindedness and accuracy are important).

### Language Arts

Recording information is integral to collecting archaeological materials. Journal entries are made daily in the field, recording the weather, who was present, what was done, what was found, and some preliminary interpretations. Students visiting archaeological sites or taking part in archaeologically oriented activities could write such a journal entry. An important aspect of archaeology is formally reporting what has been found and how it has been interpreted. This can be done through written reports, aural presentations (perhaps accompanied by slides or displays), poster displays or exhibits, or video, or the internet. Creativity can be brought out in fictional accounts of archaeologists uncovering the mysteries of the past, or elaborate reconstructions of past cultures based on archaeological information but using imagination to fill in the gaps. All of these types of activities allow students the opportunity to use archaeological terminology in context, and develop their communication skills.

### Mathematics

Archaeology can provide subject matter for exercises to develop plotting skills, numerical calculations such as percentage and averaging problems, geometric concepts, and measuring skills.

### Arts Education

Reproducing artifacts and archaeological sites allows students to be creative. The most valuable activities for giving students a sense of life in the past are those which attempt to reproduce artifacts as authentically as possible, using the materials and techniques that would have been available to the Prehistoric people. Reproductions described in Activity 5 of Chapter 7 can be adapted for any grade.

Archaeological interpretations could also be presented in visual form, as illustrations or even as dramatic recreations of the events that may have taken place at a site. These forms of expressions can bring life to interpretations that can seem static if presented only in tables of data and factual reports.

### Native Studies

Archaeology can be used as a means of studying the long prehistory of Native Peoples in Saskatchewan and the rest of the Americas. Although the importance of oral history cannot be underplayed, our picture of the day to day lifestyle of our First Nations at the time of European contact and before has been filled in through archaeological evidence.

## **GRADE LEVEL**

If an archaeological excavation is going on in your area and there is an opportunity for a class visit to it, you should try to take advantage of it no matter what level or subject you are teaching, since these opportunities are rare and, as described above, you can use archaeology to teach such a broad range of subject matter. However, archaeology more naturally fits into a few areas of the established Saskatchewan Education curriculum. These are described below.

### **Grade 4**

#### Social Studies

Grade 4 Social Studies curriculum puts the emphasis on Saskatchewan. In the

1995 curriculum, Saskatchewan archaeology should be referred to in most sections of Unit 2 (Heritage) and parts of Unit III (Interdependence).

In Unit 2, archaeology provides an important tool for looking at aspects of history, technology, adaptations to the environment, and trade. Early explorers and later anthropologists recorded some of the more spectacular aspects of Aboriginal Peoples lifestyles. First Nations elders and scholars have knowledge about many of the most common and many of the most important activities of the precontact and historic periods. However, archaeological excavations provide detailed information about many of the day to day practices of precontact peoples--information that fills in gaps in the other two kinds of history. Similarly, many historic periods and events in Saskatchewan (for example, the fur trade era, the Resistance of 1885, the settlement period) can be more fully understood only after archaeological investigations—not just to retrieve artifacts for museum displays, but to flesh out the events, by understanding what the artifacts in context can tell us about the people involved and how they lived from day to day. It is important to stress that the original context of artifacts (in archaeological sites) is what really reveals the information about age and function of the artifact, and the lifestyles of the people who used them. And it is important to stress that Precontact Peoples did not just adapt to their environment, making use of the animal and plant resources available, but also changed their environment such as burning areas to attract animals with the fresh young plants that would grow back. It is because humans change their environment in unique ways that archaeologists recognize human activity at sites even when there are no human bones to prove that people were there.

In Unit 3 (Interdependence), Module 1 deals with meeting wants and needs through technology. Archaeology provides information about changing technologies through time, and traces how changes in technology affects other aspects of life.

### Science

Grade 4 science students study fossils and rocks. It must be stressed that this is paleontology, not archaeology. Still, many concepts and techniques are shared between the two subjects.

### **Grade 5**

### Science

Artifacts of different kinds can be used to practice measuring length, mass, and angles.

### Social Studies

The current Saskatchewan Education Curriculum Guide puts the emphasis of

grade 5 social studies upon Canada. Archaeology is specifically dealt with in Module 1 of Unit 2, how we know about the past. Although much of the information in the curriculum guide about archaeology is useful, it should be stressed that the suggested activity of doing an Archaeological Dig can only be undertaken with the supervision of a professional archaeologist. Because archaeological sites are protected by the government, it is illegal to do an excavation without a proper permit, and permits are only issued to qualified archaeologists (see Chapter 2, page 5).

Module 2 of Unit 2 discusses the precontact inhabitants of Canada, their lifestyle and their technology. Knowledge of peoples whose descendants did not survive long into the historic period comes almost entirely through archaeology (see, for example, P. Such in “Further Reading” of Chapter 8). If artifacts are studied in this unit, they should again be placed within the context of archaeological sites and the lifestyles of the people who used them.

In Modules 3 and 4 of Unit 2, Canada’s story is also being fleshed out by historical archaeology. Early historic records were written by people who were seldom objective observers: they were often writing to serve their own ends and to make superiors happy. Excavation at historic sites fleshes out these observations, and often illuminates their inaccuracies; this is well illustrated in the historical chapter in *The First Albertans* (see “Books and Periodicals”, Chapter 8). Archaeological sites have been studied from all periods of Canadian History, from the Norse settlement in Newfoundland (see *Vinland Mystery* in “Videotapes and Films” of Chapter 8), to the search for the Northwest Passage (see Beatty and Geiger in “Books and Periodicals”, Chapter 8), numerous fur trade posts (Fort Pitt and Fort Carlton), Northwest Mounted Police posts (Fort Walsh), clashes between cultures (Batoche), gold rush sites (Chilcoot Trail in the Yukon), early settlement period homesteads, and industrial sites such as coal mines (Leitch Collieries in the Crowsnest Pass of Alberta).

## **Grade 6**

### Social Studies

The grade 6 social studies curriculum focuses upon the Atlantic. But it also begins to address how we study the past, and archaeology is one of our important tools.

Unit I deals with location. Archaeological examples would be useful in talking about atlases, maps, and grids, as these are all essential in recording where sites and artifacts are found, and what the environment is like in those locations. Archaeology fits directly into Unit II, where it is stressed as one of the ways of learning about prehistorical (pre-contact) periods.

The entire theme of Unit II—interactions among different groups of people and their environment both before and after contact—is central to archaeology in the

New World. Historical archaeology should be included in this unit as a means of learning about common people and minorities who are usually left out of historical documents. It has only been recently that many of these groups have been writing their own story, thus entering into our historical records. The archaeological record has always been less biased than the historical record. The archaeological record (the artifacts in the ground) is the voice of people who left the artifacts behind, whether they were rich or poor, whether or not they could read or write. Archaeologists interpret the people's story from those sites and artifacts. Archaeological interpretations, like historical documents, can also have biases, since most archaeologists continue to come from a European academic tradition. However, increasing cooperation between archaeologists and descendants of the groups they are studying (whether First Nations groups, African Americans, or others) and increasing numbers of archaeologists from non-European traditions are helping to change this.

### Math

Excavation areas and artifacts can both be used in discussions of length, area, angles, and artifacts can also be used in measuring mass. Archaeological excavations, which are often irregular shapes made up of 1 x 1 m square units, can be used to illustrate how areas of irregular shapes can be determined.

Artifacts make great subjects for data collection and interpretation. Percentage problems can be broached (for example, percentage of artifacts with certain characteristics). Also at this stage, students gather data to construct simple bar and line graphs. Archaeology can provide many practical applications for such visual display of information, such as illustrating the relative numbers of different kinds of artifacts, or comparing the numbers of artifacts in different levels of an excavation.

Archaeological excavations and materials also provide an opportunity to practice making and interpreting scale drawings, as the site and its individual features and artifacts are drawn.

### Science

In grade 6 science, ecosystems are one component of the curriculum. Archaeology provides physical evidence of how humans have changed their environment. By studying the archaeology of an area through time, one becomes aware of how environmental changes affect how humans live in an area.

Discuss the differences between how modern humans, early settlers, and precontact humans changed their environment to suit their needs. How do these changes affect the plants and animals in the environment? 100 years ago people built houses and forts, they cleared land and farmed, they build towns and cities. 1000 years ago people hunted animals and gathered wild foods, they cut trees for their

tents, and they burnt areas to attract animals with the fresh young plants that would grow back. It is because humans change their environment in unique ways that archaeologists recognize human activity at sites even when there are no human bones to prove that people were there.

## **Grade 7**

### Social Studies

The Sask. Ed. curriculum guide for Grade 7 highlights Canada's relationship to the world, particularly with the countries surrounding the Pacific Ocean. Unit I deals with the concept of "Location". In geographical terms, the physical environment profoundly affects human life, and in turn, humans affect their environment. Before archaeologists work in an area, they consult topographic maps to get an idea of landforms and water sources, they find out about the climate and vegetation of an area, and what animals would have been native to the area in the past. This advance research about the environment of their study area allows the archaeologist to hypothesize about if there will be archaeological sites in the area, the most likely places that they will be found, and the kinds of activities that will likely be represented at the site. Making and using maps during archaeological investigations of a site also provide useful practice in geographical concepts.

In Unit II, "Resources", students can compare lists of resources from the point of view of precontact peoples, early settlers, and contemporary Saskatchewan society. Do the differing distributions of these resources account for differences in population distribution in the various time periods? Do the major technological innovations evident in the archaeological record of Saskatchewan affect the population's ability to meet their needs and wants?

"Change", stressed in Unit IV, has always been a major interest of archaeologists. They have documented the continual changes in human cultures through time, and have attempted to understand what factors bring about such change. It should be stressed that, although changes in recent times have been more dramatic, change has occurred throughout human history.

### Math

Because grade 7 students begin to measure and construct angles from  $0^\circ$  to  $180^\circ$  using a protractor, they would benefit greatly from the practical application of angles in mapping sites as described in the Activities 3 and 4 of Chapter 7.

### Science

Archaeology is an excellent subject to introduce in the grade 7 science unit "Saskatchewan the Land". After deposition, archaeological sites become part of the

environment, subject to the same forces of weathering and erosion as all other objects. Choose an actual or an imaginary archaeological site. Describe the surroundings (slopes, water sources, climate, vegetation). Identify the activities that took place. Consider the artifacts that would be left behind and where they would be deposited. Discuss the physical and chemical processes that would affect the site (decay, changes in artifacts and their placement due to erosion). Could an archaeologist excavating the site account for any of these changes (they can attempt to account for movement due to gravity, they can often distinguish natural weathering and erosion from purposeful breakage and shaping of artifacts).

Study of the soils at an archaeological site can provide clues of past climates and vegetation, because of the fact that different soils form under different conditions.

In discussing glacial geology, relate it to human activity in the New World. Human habitation of Saskatchewan was not possible before the retreat of glaciers. Glacial lake terraces, the edges of glacial lakes that have since shrunk or dried up, are likely places to find very old archaeological sites, and can give clues to the approximate age of a site.

## **Grade 8**

### Social Studies

Culture is stressed in Unit I of the grade 8 social studies curriculum. Archaeology studies past cultures, their patterns, changes and why they occur. Although their data base is limited by what people leave behind and what survives the forces of nature through time, archaeology attempts to study all aspects of culture and cultural change. An integral value of archaeology is that no culture, past or present, is better than any other; each culture develops in a unique way that meets the needs of its individuals within their particular environment.

In Unit IV, Interdependence, students can consider the effects of changing technology on changing interdependence from early precontact times, through fur trade times, through early settlement period to today. Make sure they are aware that even in precontact times, people were interdependent: cooperation was essential to survive (cooperative bison hunting, for example).

### Math

In grade 8 math, scale diagrams are practiced. Scale diagrams are important in archaeology in drawing archaeological sites (see Activity 3b), features such as building foundations or hearths, profiles showing soil levels, and artifacts.

Students also measure and construct angles from  $0^\circ$  to  $360^\circ$  using a protractor.

At this level, students could map a site from any datum as long as the datum did not move (see Activities 3 and 4, Chapter 7).

## **Grade 9**

### Social Studies

As its title suggests, “Roots of Society”, the Sask. Ed. curriculum for grade 9 social studies, is the most appropriate location in the school curriculum of K-12 for a Saskatchewan archaeology unit, including field trips or out of school activities. Although Unit I (“Time”) stresses archaeological techniques and interpretations, the remainder of the curriculum also presents general archaeological themes of change, causality, culture, and technology. Field trips to archaeological sites, with or without ongoing excavations, would be useful in the fall for Unit I, or in the spring, with studies of the history and world view of First Peoples in Unit IV.

The Curriculum and Activity Guides and the bibliography for grade 9 social studies will be useful sources of information and ideas about archaeology and the way it can be presented in the classroom—not just to grade 9 classes but to other grade levels as well. This handbook should provide some useful supplementary information.

### Math

Grade 9 math students would be able to map even a large site with multiple datum points because they understand: 1) how to draw angles, 2) the nature of supplementary angles, 3) corresponding angles and alternate angles, formed when parallel lines are cut by a transversal, are congruent. They are then able to draw a scale drawing (a map) of the site, understanding the nature of similar triangles.

### Science

In the unit “Saskatchewan—The Environment”, archaeology is relevant to many of the topics. Pick an archaeological site when describing a location, and consider what the physical characteristics of a site can tell us about the activities that took place there, and when. Archaeology provides evidence of how humans affected the landscape in the past, and provides evidence of what the environment was like before human activity.

## **Grade 10**

In high school, it becomes difficult to arrange out-of-school activities of any extended length. Trips to archaeological sites and excavations require more time than is available for single class periods. However, the complexities of archaeological research can more easily be accomplished by upper level students, making it desir-

able for detailed archaeological units to be taught. Secondary school teachers with an interest in teaching archaeology are urged to consider developing new curriculums for social science courses devoted to archaeology, and get them approved by Sask. Ed. as options. For example, a Grade 11 summer school course in archaeological theory and techniques is taught through the Toronto Board of Education, and includes practical experience in Board-run excavations and laboratories.

### Science

The importance of water is stressed. Humans have always depended upon water for survival, as have their plant and animal resources. When surveying an area for archaeological sites, the land bordering rivers and lakes is investigated particularly closely because sites are far more likely to be discovered. Look at maps to see where settlements are located today in Saskatchewan. Although major roads and railways have an impact upon where towns are located, and which towns thrive through time, the presence of a dependable water source remains important.

### **Grades 11 and 12**

### Science

The benefits of teaching archaeology to illustrate the nature of scientific investigation were discussed earlier in this chapter in the “Area of Study” section.

### Computing Science

Computers have become a vital tool in archaeological analysis. Most archaeological cataloguing systems are computer data bases. Each record represents a single artifact or a group of artifacts which comes from the same level of one unit. The records are made up of fields which contain information about where the artifact was found, and descriptive information about the artifact (its size, weight, the material of which it is made, and what it is thought to be). Students can use an archaeological collection to devise a workable artifact database or catalogue. The information in these catalogues can then be manipulated to form tables of information about what artifacts were found and where. Illustrations in archaeological reports include computer-generated maps, digitized artifacts and photographs, and the entire report is compiled in a type-setting program. The internet has become a valuable research tool.

## **ARCHAEOLOGY AND THE COMMON ESSENTIAL LEARNINGS**

Archaeology offers the subject matter and the activity opportunities to effectively incorporate all of the Common Essential Learnings (C.E.L.s) into the education of pre-university students. The activities in the next chapter incorporate all of the C.E.L.s into their programs. For clarification, an icon representing the C.E.L. will

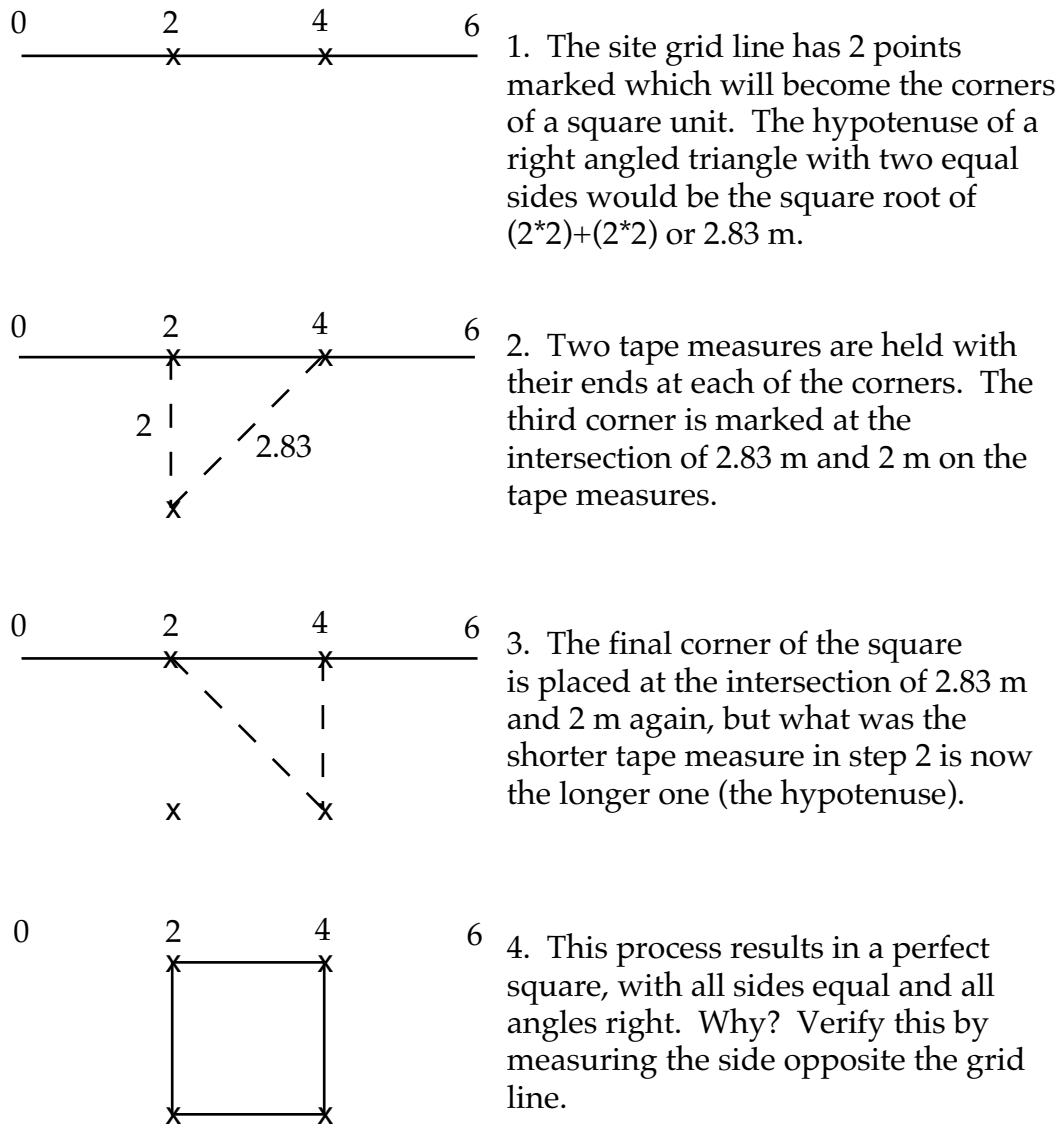
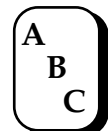


Figure 10: An explanation of how the Pythagorean Theorem is used by archaeologists to set out square excavation units.

appear in the margin of the text beside the stage in the activity which exercises that C.E.L. in particular (understanding that the C.E.L.s overlap in different learning situations).

**Communication**

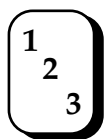
Archaeology as a discipline requires participants to be able to study literature, take notes about their research, and report their findings in written and verbal form. Activities based upon the subject of archaeology (such as those in the next chapter) stress class and small group discussions, note-taking,



and the composition of reports. The language of archaeology (special terms and meanings such as those listed in the glossary in Chapter 10) provides an interesting means of expanding student vocabulary.

### **Numeracy**

Archaeological activities provide practical situations for using mathematical concepts. Those activities give students an opportunity to practice doing problem-oriented calculations and measurements accurately and in the appropriate situations. Some archaeological problems demand that students



be able to organize their numerical information in the form of tables and graphs. They must also be able to interpret that numerical information and use it to solve research problems, and perhaps predict the outcomes of further experiments or observations.

### **Critical and Creative Thinking**



The introduction of a topic such as archaeology, that tends to be relatively unknown to students and yet holds the natural allure of the old and mysterious, is a valuable means of exercising critical and creative thinking skills. Archaeology is problem oriented and provides students the opportunities to generate appropriate questions, consider methods of answering those questions and evaluating the methods they chose. The tentative nature of archaeological interpretation forces students to be flexible, and prepared to alter their interpretations when the evidence demands it.

### **Technological Literacy**



The arrowhead symbol indicates archaeology's concern with our understanding human technological literacy and how it has changed through time. Studying the technologies of different cultures makes students better able to be objective and critical about the technology of our own culture and its effects on our environment and society. Archaeological research also involves the effective operation of various tools and pieces of equipment such as scales, surveying equipment, and computers.

### **Personal and Social Values and Skills**



Archaeological activities and information can contribute to the teaching of this C.E.L. in a number of ways. Because it is the study of people through time and in many environments, it generates a respect for the richness of human achievements and adaptability. Much of archaeological research involves working closely and effectively in group situations, which allows students to practice coordinating their efforts, designating tasks to specific

people, cooperating, resolving conflict, and reaching consensus about their conclusions.

### **Independent Learning**



Archaeology provides stimulating material to foster independent learning. Students follow the problems from proposal, through research design, conducting the research, analysis of the results, presenting the conclusions, and evaluating the entire process. Participation in archaeological activities can certainly make learning fun.



## CHAPTER 7: CLASSROOM AND OUTDOOR ACTIVITIES

The following activities are meant to provide teachers with ideas. Feel free to copy information for use in your class or adapt the activities to suit your special needs. The symbols in the margins indicate the predominant Common Essential Learning that is being exercised in that stage of the activity.

### 1. NEWSPAPER STRATIGRAPHY

#### Target Group

Grade 6 science (palaeontology and fossils)  
Grade 8 science (erosion and deposition)

#### Purpose

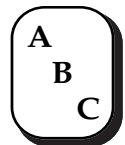
To demonstrate the law of superposition.  
To demonstrate a common form of relative dating.  
To demonstrate problems of redeposition, or other disturbance to archaeological deposits.

#### Activity

This is a simple discussion activity which makes stratigraphic concepts easy to understand. Bring a newspaper to school every day for a week and make a show of setting it on your desk, gradually forming a pile (DEPOSITION). At the end of one week, ask the students to describe what you did. Ask them where the oldest newspaper is lying, and how they know that. Pull out a flyer that has no date on it from out of or on top of a newspaper and ask the following questions:

How old is the flyer?  
How do they know that?

If you went through the newspapers in the pile one at a time looking for an



article, would the order of the papers in the pile remain the same?

Compare the newspapers with floods of a river, as in the following scenario. A river is jammed with ice one spring, and the flood is like a temporary reservoir of standing water, depositing a new layer of sediment on the ground surface along its banks. After the jam breaks and the water recedes, people visit that river bank. They drop artifacts as they prepare their nets and fish, and then leave. The next year, the river floods again, covering up the things left by the people. One year, heavy spring runoff causes the river to flood again. This time the water rushes over the ground and erodes the ground surface rather than depositing more sediment. The flooded river cuts through the fishing site, and carries some of the artifacts away, dropping them downstream when the water current slows down. These redeposited artifacts are not necessarily younger than the artifacts lying below them. This is one reason why archaeologists must take careful note of artifacts and their context—artifacts jumbled together with pebbles and bones of a similar weight have probably been redeposited, and the law of superposition no longer applies. Brainstorm about other types of disturbance that would be possible at an archaeological site (roots, burrowing animals, scavengers, etc.). How would these forms of disturbance be recognized at an archaeological site? (Roots push artifacts aside, burrowing animals throw artifacts behind them and leave holes for artifacts to fall into, scavengers remove bones from the site.)



## 2. CLIMATE CHANGE/CULTURE CHANGE

This activity is adapted from one out of the Teacher’s Resource Packet from the Smithsonian Institution (see “References for Teaching Archaeology in Schools”, Chapter 8).

Target Group

Grade 6, and others

Purpose

To practice interviewing techniques.

To provide an understanding of the relationship between culture and environment, and to illustrate that the relationship is as important now as it was in the past.

## Activity

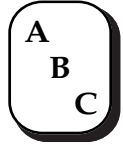
Atmospheric Environment Service in Regina (phone 780-5739) houses climate data for stations across Saskatchewan. For a small fee (\$1.05/microfiche page, subject to change), you can obtain the records of monthly, daily, or yearly totals of precipitation for your local area. Students can use this information to construct graphs of average yearly rainfall over the past 30 or 40 years. Discuss patterns in the graphs: wet periods, dry periods, and general trends in recent years.



Armed with the graphs, students can interview local farmers or ranchers to find out how the specific fluctuations in rainfall have affected their operations—their overall productivity, new management techniques they have been forced to adopt, or new species they have had to introduce. If there is an obvious trend in the recent years on their graphs, ask the farmers what the future of their operation will be if the trend persists.



Students can summarize and report their findings in written form, or can make oral presentations. Have them relate their findings to the archaeological record by considering some of the following questions:



Does our society continue to adapt to climatic changes? Yes, but because of our lifestyle, we do not normally adapt by moving to more hospitable areas, as people often did in the past.

What adaptive measures can we practice that were unavailable to precontact peoples in the province? We have more control over the species that grow in an area, but we have still have no control over the climate.

What kinds of evidence will be available to future archaeologists to help them study the adaptations of rural Saskatchewan peoples? plant and animal remains, farm machinery, historic records of climate and food production



### 3. MAKING MAPS

Mapping a site is a great way to get field experience without disturbing a site (see Activity 10B). Any kind of site can be mapped, from features in a school yard, to features in an old farm yard, to tipi rings in a stone circle site.

#### 3A. MAKING A MAPPING BOARD

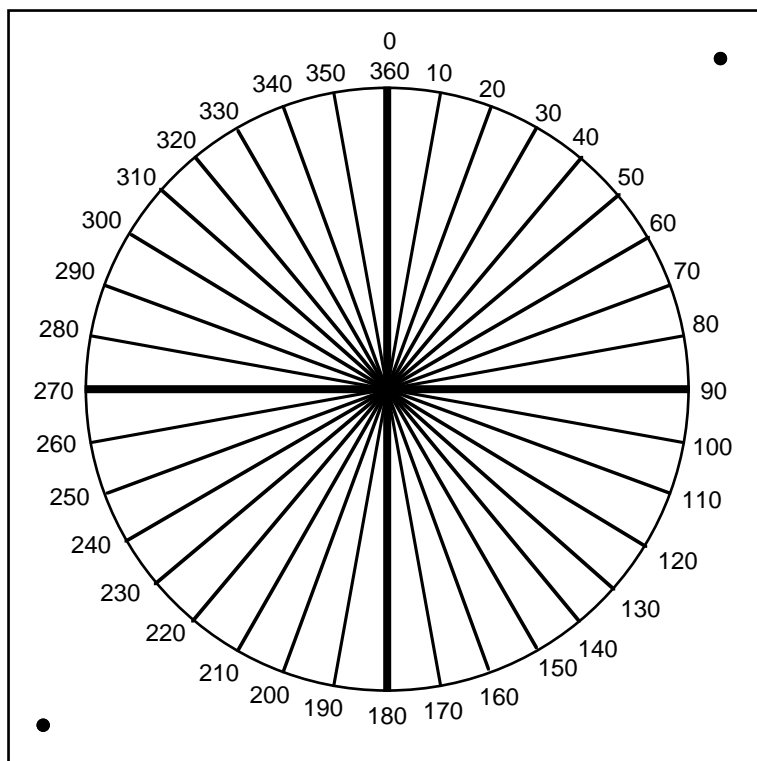
##### Target Group

Grades 7 and up, or the teacher can make one for use by the group in the next activity.

##### Purpose

To create a device for measuring angles in the field.  
 To practice drawing angles and understanding degrees in a circle.  
 Option: This activity can be used in conjunction with the teaching of latitude and longitude to young students.

Figure 11: Diagram of a mapping board. The board would be anchored to the ground with long nails in the center, and two corners.

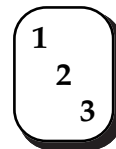


## Activity

A mapping board is easy to make and can be used to map sites. Students can make their own, or mapping teams can cooperate to make their board. At least one board per team is necessary for a mapping activity.



On a sheet of paper, draw as large a circle as possible using a compass (the exact size is unimportant). Enlarge the centre point so that it is clearly visible. Draw a line bisecting the circle. Use a protractor and ruler to divide the circle up into  $10^\circ$  segments. Choose two perpendicular lines and make them thicker. Draw tick marks around the circumference of the circle indicating the degree divisions (this step can be missed, and students can estimate the divisions when they use the board in mapping).



Cut out the circle and paste it onto a piece of heavy cardboard or plywood (a square piece is easiest to use, but it can be any shape). If a square is used, align the two thicker lines on the circle so that they point toward the midline of each side of the square, or toward the corners. Print numbers around the outside of the circle, indicating the degree measurements. Because the mapping board is used by securing it to the ground using long nails, these same nails can be used to make holes through the center and two corners of the board. The mapping board (see Figure 11) is ready for use in the mapping activity which follows.

### 3B. MAPPING A SITE

#### Target Group

Can be adapted for grades 7 and up. Younger students may enjoy mapping a site, although they will need help drawing the map back in the classroom.

#### Purpose

- To practice rudimentary mapping skills.
- To make scale drawings, using information obtained in the site survey.
- To use geometric relationships such as corresponding, alternate, and supplementary angles, and similar triangles in a practical situation.

#### Equipment

Each mapping team should have the following:

## In the field

mapping board (see Activity 3A)  
 compass (optional, several groups can share one)  
 a long measuring tape (minimum 30 metres)  
 three long nails  
 note pad and pencil

## In the classroom

rulers  
 protractors  
 graph paper

## Activity

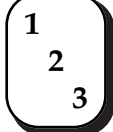
Before beginning the activity, the instructor should choose any outdoor site with soft ground (to stick nails into) and objects or features which can be mapped. These features need not be archaeological, but can be features in the landscape such as fence posts, the waters edge, a clump of trees, etc. Divide the site into sections, each of which will be mapped by a different student team. If the students are in grades 7 or 8, make sure the site sections are small enough to be mapped with the tape length available (the furthest object is within one tape length of the mapping board). The boundaries of the sections can be marked with flagging tape, string, or pylons.



Divide the class into teams of three students each. Each student team will cooperate to perform the following tasks. Place the mapping board in any convenient place within the area to be mapped (at the south end of the site will ensure that younger students do not have to measure greater than 180°). Stick the center nail through the board: this will be the datum point for that area. Place a compass along the 0° line and rotate the board until the compass needle points to north (or approximate the alignment of the board to north). Secure the mapping board in place by pushing two more nails into the corner holes until they are flush with the board.



To map the site, hook the end of the tape measure on the center nail of the mapping board. Student 1 unwinds the tape measure and walks to a feature that is to be mapped. Student 2 makes sure that the end of the tape does not become unhooked. Student 3 writes down a description of what is being mapped (briefly, for example, “Ring #1” or “North corner of cellar depression”). Student 1 then calls out the distance from the feature to the datum (mapping board). Student 2 calls out the angle indicated by the tape along the mapping board. Student 3 writes down both figures next to the feature description (see Table 1). The team continues with these tasks until all features in their section have been mapped. Make sure that the students



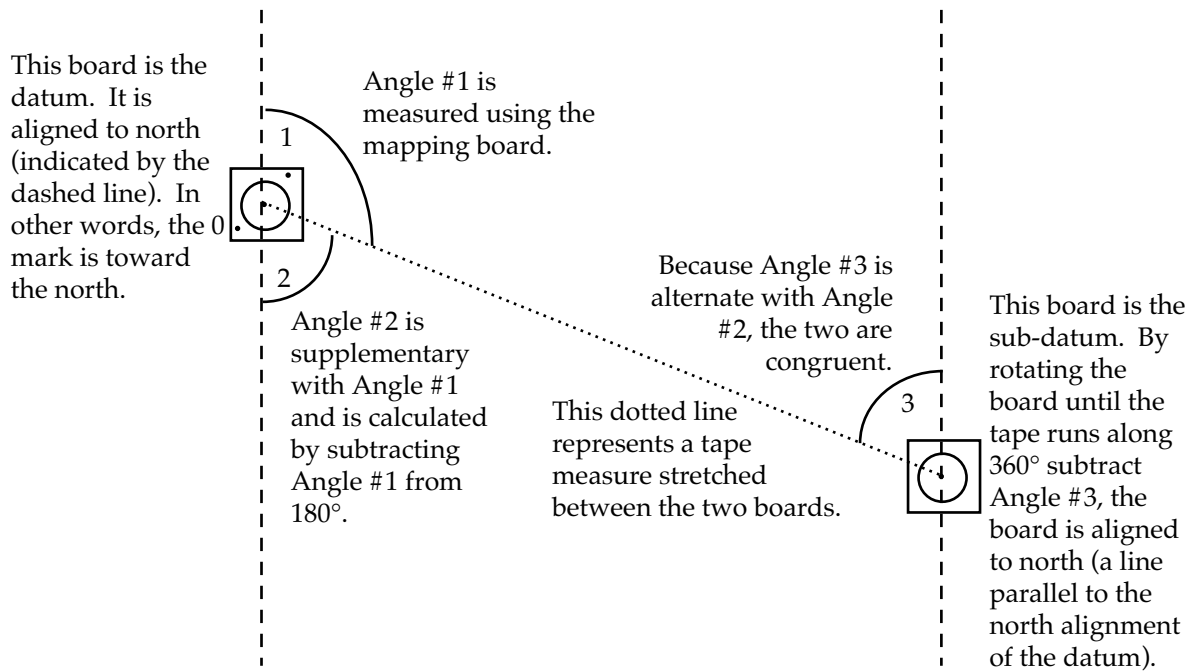
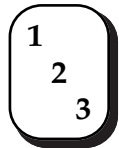


Figure 12: Diagram and explanation of the geometric relationships which allows surveyors to move datums while keeping the proper alignments.

take turn performing the different tasks. In order to eventually tie the sectional maps together, it is essential that the teams include the datums of surrounding teams as points to be mapped.

If an accurate master map of the site is the goal of this activity, and if the students are familiar with geometric relationships such as the congruence of corresponding and alternate angles (Grade 9 or higher), the mapping boards should be aligned more carefully so that the individual team maps can later be joined up (see Figure 12). This entails coordination and cooperation between groups, and should be supervised by the teacher. Begin with a main datum—a single board which has been aligned to north and secured with three nails. Choose a sub-datum and place a mapping board on it secured with a central nail. Stretch a tape measure from the datum to the sub-datum and measure the distance and angle from the datum (Angle #1). Calculate the number of degrees in the supplementary angle (Angle #2). Rotate the sub-datum board until the tape measure lies along the measurement equal to Angle #2 (which is congruent to the alternate angle—#3) subtracted from  $360^\circ$ , and secure the subdatum with two more nails. The sub-datum board will now also be aligned to north. To make sure that the students understand the geometry of changing datums, discuss the steps in Figure 12 in class before going into the field. This process of tying datums together can be repeated, creating as many sub-datums, or sub-sub-datums



as required for the numbers of student teams involved.

Archaeologists like to relate their datums to a relatively permanent point such as the corner of a buildings, or a survey bench mark. This allows future archaeologists to easily find the site and features by first finding the permanent reference point. Students can tie their information to a permanent reference point: after securing the mapping board to the site's main datum point, measure and record the distance and direction from datum to the permanent reference point.

In the classroom, students can use the information recorded by Student 3 to draw a map of the site. On graph paper, a point is chosen as the datum, and the features are plotted using a protractor to measure the angle and a ruler to measure the distance (see Figure 14 with the next activity). Maps of adjacent groups can be joined by overlaying the common datum point, and retaining the north alignment (make sure the vertical lines on the graph paper remain vertical). This will result in a composite map of the site. If the team datums have not be aligned as illustrated in Figure 12, the sections of the composite map will probably not match up very closely. Alternatively, each student can individually plot the points from all of the groups.

1  
2  
3

#### 4. CEMETERY ARCHAEOLOGY

##### Target Group

This activity can be adjusted to suit the interests and abilities of most grades, but is most suitable for students from grades 7 upward (see also Activity 3).

##### Purpose

To practice the steps taken by archaeologists in their studies:

- 1) identifying research problems
- 2) choosing the best methods to use
- 3) collecting the data
- 4) analysing the data
- 5) presenting the results.

To illustrate how archaeologists use artifacts to deduce characteristics of a culture, and to study changes in the culture over time.

To practice mapping skills.

To foster respect for cemeteries as historic sites (getting away from the idea that cemeteries are spooky).

## Necessary Equipment

### In the Field

surveying equipment (see Activity 3B)  
tombstone record forms

### In the Classroom

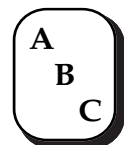
rulers  
protractors  
graph paper  
calculators or computer spreadsheets to analyse the data (to calculate average figures, percentages, etc.)

## Activity

Because of ethical concerns when dealing with people's ancestors, students should be prepared for this activity by taking part in thorough discussions about proper respect for the dead and their belongings. Make sure the class understands the gravity of their project: that they are studying real artifacts which, although created by people in the past, continue to be important symbols to friends and relatives of the deceased today. Archaeologists must show similar sensitivity and responsibility when dealing with archaeological sites, and try not to disturb remains unless it is unavoidable. Students should be given the option of not taking part in the activity, and all parents should be informed about the nature of the activity, so that their concerns can be dealt with to avoid unnecessary offence. Choose a cemetery to study, and make sure that grounds keepers are aware of and supportive of the activity.



Cemeteries hold a wealth of information about a community and its changes over time, much of which can be studied by looking at the tombstones. Get the students to brainstorm about what kinds of information a cemetery can reveal about a community: how old the community is, changes that have occurred in length of life span, life span differences as related to social group or sex, family size and composition, changes in ethnic composition of the community over time, religious beliefs concerning death, dates of epidemic diseases or tragedies and which groups these affected, etc. The history and growth of the cemetery can also be explored, by looking at the distribution and chronology of tombstones, and by looking at changes in tombstone style over time. Have the students decide which kinds of questions interest them the most; they can even form hypotheses about specific relationships that they plan to test by observation in the cemetery. As a class, make a list of the kinds of information that should be recorded about the cemetery in order to provide the necessary information to answer the questions (including such things as location of stones, size of stone, material



of which it is made, date of birth and death, sex, surname. Use this list to design a tombstone record form (Figure 13).

1  
2  
3

At the cemetery, break the class into groups of 3-5 students, each with a section of the cemetery to study (about 5-15 tombstones, depending upon amount of time available). Make sure that adult supervision is sufficient to keep all students under control. Have the students map their section of the cemetery by choosing a datum (starting point), and measuring the distance and direction of other tombstones from their datum. (Refer to Activity 3B for detailed instructions for mapping a site.) The map can be a rough sketch, made by pacing off distances and estimating angles, or it can be quite exact, using compasses, a mapping board (see Activity 3A), tape measures, or even a surveyor's transit. If a detailed map is being made, it is easier to record the measurements in a notebook (see Table 1) and draw the map back in the classroom using rulers and protractors (see Figure 14). Make sure that each group also maps the datum of the neighbouring group, so that the section maps can be joined together to form a map of the cemetery. The maps should indicate major features of the environment (trees, brush, and large hills, etc.) as well as a separate number for each tombstone.

A  
B  
C

Then each group must record the necessary information about each tombstone in their section. The use of standardized forms ensures that all groups will record the same types of information (Figure 13). Unique features (the presence of more than one person's name on one stone, for example) can be mentioned in notes at the bottom of the form. Make sure that descriptions can be matched with individual tombstone locations drawn on the map (include the distance and angle from datum on the record form for insurance).

?

Back in class, the students can pool their information, building up a database of all tombstones and their location in the cemetery (this can be done in a computer database, if the expertise is available). Each group can be made responsible for answering one of the questions, and can use the data to determine if they can see any consistent relationships among the different categories of information. Groups can report their findings to the class, showing their map and graphs of their data. Class discussion of the results should include examination of assumptions, the validity of the sample (is it large enough to prove the findings?), and accuracy and relevance of the interpretations.

A  
B  
C

After the reports have been made, discuss as a class what surprising things the study has indicated about the community. Ask the students to consider how their questions dictated the methods of their fieldwork. Discuss how your study would have been different if the cemetery was

Figure 13:

Forms can be made up to contain any type of information that interests the class. Multiple choice answers allows some consistency in description between groups; answers can be elaborated in the notes at the bottom of the form. If this form is made up on a computer database, the information gathered in the field can later be entered into the computer; students can then practice using the computer to manipulate the information and generate tables or charts to show information such as average figures for different classes of tombstone (for example, average width of tombstone for each sex class). Alternatively, maps can be drawn indicating the distribution of different surnames or religion affiliation within the cemetery.

## TOMBSTONE RECORD FORM

Tombstone Number: \_\_\_\_\_ Group Number: \_\_\_\_\_

Distance from datum: \_\_\_\_\_ Angle from datum \_\_\_\_\_

Sex: Male \_\_\_\_\_ Female \_\_\_\_\_ Surname: \_\_\_\_\_

Year of Birth: \_\_\_\_\_ Year of Death: \_\_\_\_\_ Direction Facing: \_\_\_\_\_

Size: Width \_\_\_\_\_ Height \_\_\_\_\_ Thickness \_\_\_\_\_

Shape: Rectangle \_\_\_\_\_ Rounded Rectangle \_\_\_\_\_ Cross \_\_\_\_\_ Other \_\_\_\_\_

Material type: Marble \_\_\_\_\_ Granite \_\_\_\_\_ Cement \_\_\_\_\_ Other \_\_\_\_\_

Type of Decoration: Engraved Carving \_\_\_\_\_ Sculpture \_\_\_\_\_ Colour \_\_\_\_\_  
None \_\_\_\_\_ Other \_\_\_\_\_

Subject of decoration: Supernatural Figure \_\_\_\_\_ Human \_\_\_\_\_ Animal \_\_\_\_\_  
Flower \_\_\_\_\_ Cross \_\_\_\_\_ Geometric Design \_\_\_\_\_ Other \_\_\_\_\_

Extent of Decoration: Ornate \_\_\_\_\_ Moderately Ornate \_\_\_\_\_ Plain \_\_\_\_\_

Religious Affiliation: Catholic \_\_\_\_\_ Protestant \_\_\_\_\_ Other \_\_\_\_\_ Unclear \_\_\_\_\_

Epitaph: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

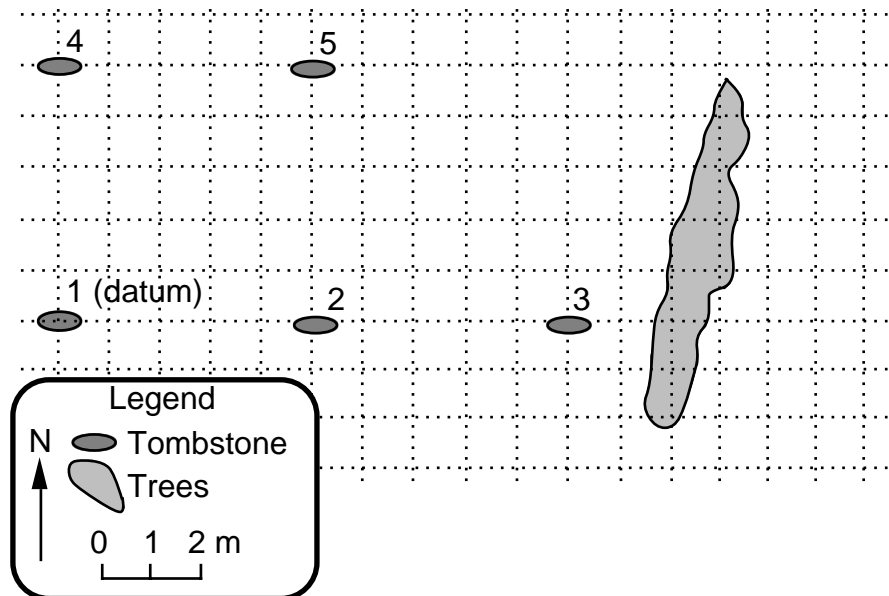
Other Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

scheduled for destruction, and this was your last chance to save information about this important site (you would have tried to retrieve as much information as possible, even if it was not directly related to the questions which you were trying to answer, because future archaeologists would have to rely on your notes to answer new questions).

Table 1: Mapping Data for a Fictional Cemetery

Subject	Direction ( $^{\circ}$ off magnetic N)	Distance (m)
Datum (Tombstone 1)	0	0
Tombstone 2	90	5
Tombstone 3	90	10
Tombstone 4	0	5
Tombstone 5 (Datum for Group 2)	45	7.1
Tree cluster (N end)	70	14
Tree cluster (S end)	100	12

Figure 14: Map drawn from data in Table 1.



## 5. ART ACTIVITIES

One of the ways archaeologists learn about past lifestyles is by trying to copy the artifacts and features that they find, using only materials that would have been available to the people they are studying. Some of these “replication studies” can be incorporated into art classes.

### 5A. MAKING PREHISTORIC-STYLED POTS

#### Target Group

Can be adapted for students of any age.

#### Purpose

To demonstrate the techniques used by precontact craftspeople.  
To develop students’ appreciation for the skill possessed by the craftspeople.

#### Activity

With a few adjustments, the pottery techniques presented in the 1978 Sask. Ed. Division II Curriculum Guide (pp. 167-173, 179-188, 235) can be used to reconstruct the process used in precontact times to produce pottery in Saskatchewan. For younger students, pinch pots can be formed using commercial clay and dried. For older students, natural materials can be used. Native clay can be dug from local sources. It can be mixed with temper (sand, crushed rock or crushed fired pottery) at a ratio of about 4 parts clay to 1 part temper. This paste mixture is then formed into pinch or coiled pots, thoroughly dried, and fired in open fires. The firing technique is the most difficult (see below), and often results in broken pots. The process involved in creating pottery from scratch can be simplified (by eliminating the firing, for example) according to student interests, abilities and time availability; however, participation in the entire sequence of tasks will create a fuller appreciation of the precontact way of life. The form of pot can be entirely original, but older student may want to copy the shape and design patterns of precontact vessels from different areas of Saskatchewan (Figure 15).



#### Firing Technique:

Make sure the pots are completely dry (at least seven days of dry weather). After obtaining permission from fire authorities, dig a pit and build a large bonfire in it. Let the fire burn down to hot coals. Place the pots near the fire to slowly heat up. Place the pots in the coals to heat further.

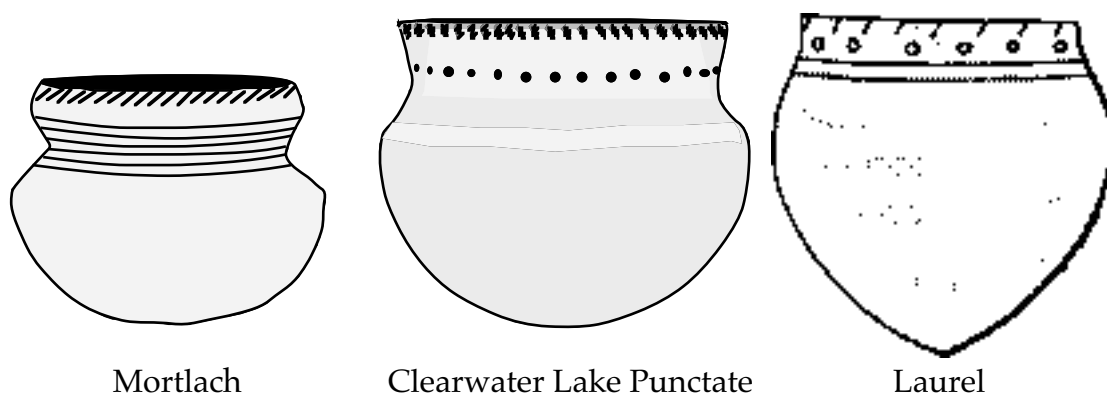


Figure 15: Some precontact pot shapes and designs found in Saskatchewan.

Dig the pots into the coals, putting coals inside and around the pots. Bury the pots and coals under ashes and dirt and let them heat for several hours. Finally, carefully rake the pots out of the fire.

Make sure the students are aware of the danger of firing, and that their pots may break in the process. If breakage occurs, stress the fact that the pots of precontact potters usually broke as well, either during firing or in everyday use. Archaeologists who dig up the pot fragments (called sherds), try to reconstruct the pots, to determine their form and what they were used for. The students can collect the broken pieces from their pots and try to reconstruct them using masking tape or glue—a task made particularly difficult if the sherds from several broken pots are mixed together or if some of the pieces are lost in the dirt and ashes. Boxes or basins filled with sand are helpful in giving support to glued pieces as they dry. This additional activity can turn a “failure” into an interesting and useful learning experience, as students get to experience one of the painstaking tasks often undertaken by archaeologists.



### 5B. POTTERY PUZZLES

If time is limited, or if a less extensive activity is desired, this activity will provide an informative and entertaining alternative to Activity 5A.

#### Target Group

Can be adapted for grades 3 to 6.

### Purpose

- To illustrate precontact pottery types
- To illustrate problems encountered by archaeologists in pottery reconstruction.

### Activity

Have students design and draw a picture of a pot in a similar style to those made by Saskatchewan's precontact peoples (see examples in Figures 15). They should include some form of decoration along the rim, neck or shoulders of the vessels (incised decoration is easiest to draw). Finally, they should colour the pots in earth tones, either simulating the mottled blacks, greys, and browns of vessels that have been fired in open fires, or simulating the painting of pots with precontact materials such as red or yellow ochre (iron oxides). After the drawings are completed, have the students cut out their pictures and cut them into puzzle pieces (10-20 pieces, depending of the skill level of the students and the time available). Divide the class into groups of five or fewer students and have them mix up their pieces. Each group should then exchange their pieces for those of another group, and attempt to reconstruct the vessels.



After the activity is completed, discuss the problems that they encountered using some of the following questions:

- Could they easily distinguish which "sherds" belonged with which vessel?
- Could they tell what part of the vessel each sherd represented (the rim, the neck, etc.)?
- What additional problems would an archaeologist encounter if he or she discovered the remains of the vessels? Some or most of the pieces would probably be missing, and the actual number of vessels would be unknown at first.



## 5C. ROCK ART

### Target Group

Can be adapted for students of any age.

### Purpose

- To demonstrate the techniques used by precontact craftspeople.
- To develop students' appreciation for the skill possessed by the craftspeople.

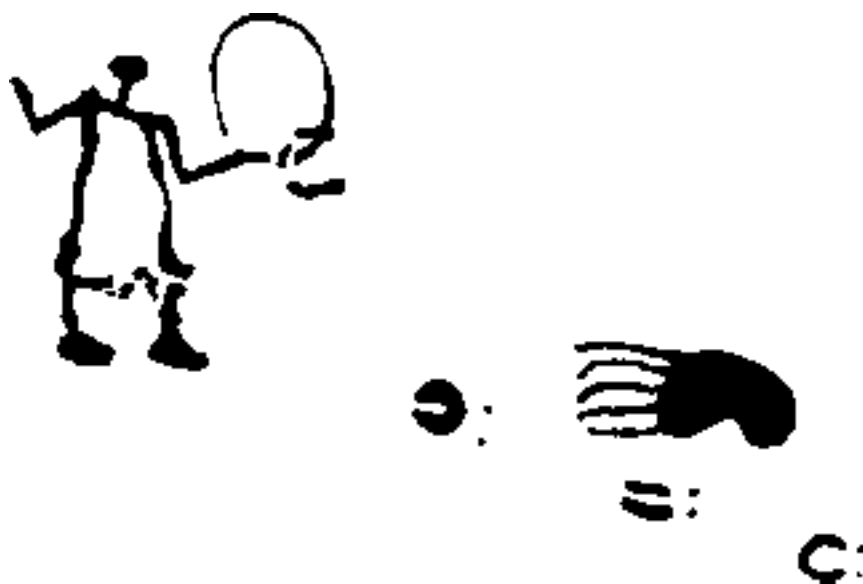


Figure 16: Petroglyphs from the St. Victor site. Tim Jones, an anthropologist who specializes in rock art, identifies the figures as a man beating a drum and bison or elk and grizzly bear tracks.

Rock art is one of the few precontact drawing forms which has withstood the ravages of nature and remains available for archaeologists to study. Common subjects were simple human figures, animal shapes, or animal footprints (Figure 16). Images were either painted on (pictograph) or carved into (petroglyph) the stone surface. Students can be introduced to the art form by attempting it themselves.

If sandstone outcrops occur in or near your area, obtain one or several large flat slabs (the softer the better for petroglyphs).

#### 5Ci. Pictograph



Mix a thick batch of tempura or other paint type on a piece of wood. Or for greater authenticity, attempt to make natural paints and stains by crushing berries or ochre (iron oxide), and mix them with water or grease. Students can experiment with making and using different paint materials to see which work best. Apply the paint to the rock surface with natural



“brushes” made from sticks or twigs, feathers, or any other items the students come up with.

### 5Cii. Petroglyph

For petroglyphs, students can draw a simple shape or figure with charcoal or pencil on the stone. This can be done individually, or working together in groups. Incise the shape using a rock to rub and peck at the sandstone, or use a strong stick to rub sand mixed with water against the sandstone to wear grooves into the rock. The process of creating the petroglyph can take an extremely long time, and creates a great respect for the patience as well as the skill of the precontact craftspeople. To avoid monotony and fatigue, this activity might best be done in a relay system of students working in ten minute shifts, in conjunction with another activity.



Because sandstone erodes easily, petroglyphs are often extremely faint and difficult to make out. Making rubbings of the petroglyphs is a useful way to copy the glyph and often reveals details that would not show in a photograph. Have students make rubbings of their petroglyphs (see methods outlines in Sask. Ed. Division I and II Art curriculum guides).



### 5D. BEADING

The bow loom has been widely used by North American Indian groups. Although shell and bone beads were used in precontact times, glass beads obtained through the fur trade became the most popular in more recent times.

#### Target Group

Grade 5 to adult.

#### Purpose

To illustrate beading methods.

To improve eye-hand coordination and exercise creativity.

#### Activity

Have students collect suitable branches—strong yet flexible—for their looms. Using a knife or sharp rock, notch the stick about 1 cm from either end. Warp threads travelling along the length of the bow usually number from 6 to 10, and should be one bead's width apart or slightly more. They can be strung onto the bow in two ways.



The first, illustrated in Figure 17, involves tying a long thread to one end of the stick and wrapping it from end of the stick to the other, tightly so that the stick bows. Brace the stick against the ground or table to maintain

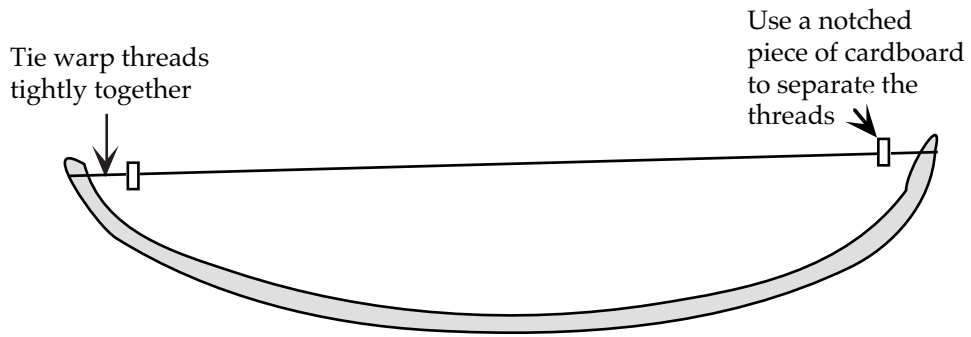


Figure 8a: Bow loom from the side. A string is wrapped tightly around the two ends of the stick, making the stick bend. Keep wrapping until at least five warp threads travel from one end to the other. Notching the stick will keep the warp threads from slipping. The warp threads are tied together tightly near the bow ends. A piece of cardboard with one notch per warp is inserted, with each warp thread firmly pushed into the corresponding notch; the notches on this cardboard should be slightly farther apart than the width of a bead.

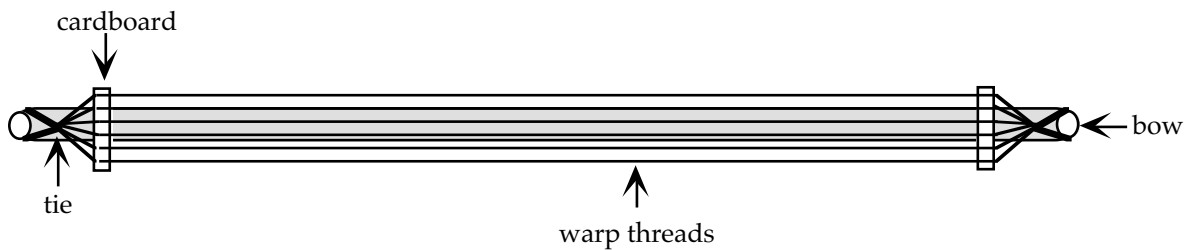


Figure 8b: Bow loom from above.

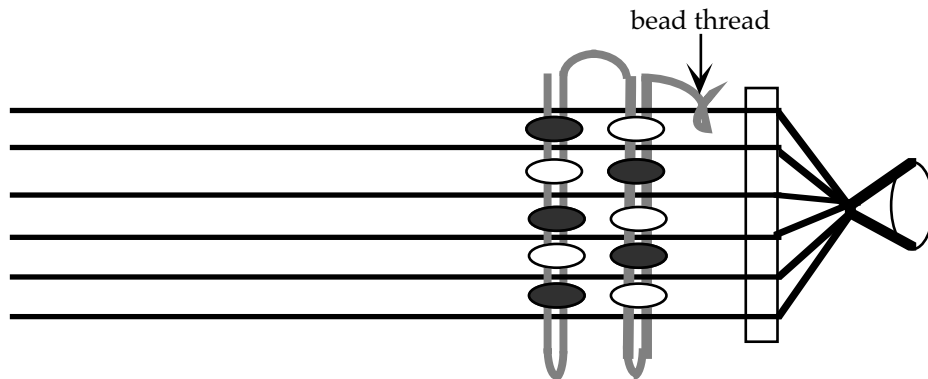


Figure 8c: To bead, tie bead thread firmly to one of the warp threads. String one fewer beads than there are warp threads onto the bead thread. Bring the thread and the beads under the warp, and arrange the beads so that there is one bead between each two warp threads. Push firmly with one finger from below the beads, pushing the beads up between the warp threads. Bring the bead thread around the outer warp thread and push the needle back through the beads, this time above the warp. Pull the bead thread tight. Continue with a new set of beads.

the bow as you wrap. When you have the desired number of warp threads between the bow ends, tie the loose thread end to the bow. Tie the warp threads tightly together near each of the bow ends, and then insert a notched piece of cardboard to keep the warp threads the desired width apart (about one bead's width).

The second method is to cut two rectangles of heavy leather. Punch one hole in each rectangle large enough to fit over the bow end. Using a threaded heavy leather needle, pierce one piece of leather and knot the thread. Pierce the second piece of leather, leaving a length of thread between the leather pieces about 10 cm shorter than the length of the bow. Pierce the first leather again, about one bead's width from the first needle hole, leaving the same length of thread between the leathers. Continue sewing between the leather pieces until you have the desired number of warp threads, and tie the thread end securely. Bend the loom stick and loop the leather rectangles over either end, securing them in the stick notches.

To bead, tie the beading thread securely to an outside warp at least 5 cm from the bow end. Thread a thin beading needle and one fewer beads than there are warp threads onto the bead thread. Bring the bead thread and beads under the warp threads, and arrange the beads so that they fall one between each two warp threads. From below the beads, press with one finger along the bead row, pushing the beads up against the warp threads, making sure that one warp thread falls between each two beads. Bring the bead thread out below the outside warp, and insert the beading needle back through the row of beads, this time above the warp threads. Thread another row of beads onto the bead thread and repeat the process, remembering to bring the bead thread around the outside warp. Continue until the beadwork is the desired length, and tie off the bead thread securely. Remove the warp threads and beads from the loom, leaving long thread ends. Knot the warps together at each end. The bead work can be left as it is, or it can be sewn (hiding the warp ends underneath the beads) to a piece of leather or heavy cloth to form a bracelet, bookmark, or decoration on an item of clothing.



## 6. SOLVING ARTIFACT MYSTERIES

The point of any analysis or classification activity is missed if objects are given a name simply because that is what it would be called in a book. The form of an object must be described because it is an essential clue to the function of the object. Once described, archaeologists compare the form of the artifact with the form of similar items with which they are familiar. They make an analogy, assuming that similarity in form between two objects also means similarity in what the objects were used for. They call a flat thin pointed stone tool an “arrowhead”, not simply because arrowheads have been described from other archaeological sites, but because the tool shares properties with items known to be used to tip arrows today. The following activity explores the problems involved in artifact analysis and is loosely based upon one by Parker B. Potter Jr. ([Archaeology and Education](#) 1:1:11-13).

### Target Group

Grade 4 to 12.

### Purpose

To illustrate the fact that artifacts do not come out of the ground with an identity, but that their identity is created by the archaeologist.  
To introduce the concept of analogy, and how it is often used in archaeological interpretation.

### Activity

Hold up two objects in front of the class, one which is of a familiar type (for example, a framed picture, an arrowhead) and one which is unfamiliar (for example, a kitchen gadget, or a mechanical part). Lead a class discussion about the nature of the two objects using some of the following questions:



Have you ever seen either object before? No (because you have just brought them from home).

What are these objects? The familiar object will be instantly labelled, whereas the unfamiliar one will probably not be.

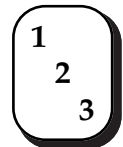
After some guessing as to the nature of the second object, reaffirm what has just happened: although the two objects have never been seen before, one was easily identified, whereas the other was not.

Why were you able to identify one object and not the other? The

students had seen things similar to the familiar object before, whereas the other object was entirely new.

When archaeologists find objects, some are easily identified, as with arrowheads, whereas some are more problematic. Those that are unfamiliar are described, and compared with objects that are known from a living situation (a form of analogy); if two items are similar in form, it is assumed that they are also similar in function. Suitable analogies can be looked for in early accounts of the tools that were being used by the Indian groups when the first Europeans arrived, or similar objects may have been used by early settlers, many of whom still live in Saskatchewan and remember the old ways. The context of an artifact (the other debris around it) can also provide important clues. For example, if an unknown artifact was found near scrapers and fleshers, an archaeologist would assume that the unknown artifact was also used in hide processing; the search for analogies would begin in historical descriptions of hide processing, or by talking with modern people who process hides using traditional methods. Finding analogies in living situations does not provide proof of an artifact's function, but it allows an important starting point for the interpretation of human activities at a site—interpretations which may have to change if other pieces of the archaeological data are inconsistent with the assumed artifact function.

Getting back to the subject of the unfamiliar item in the classroom, provide the students with a clue to the identity of the item—for example, the room in your house from which it came. Pass the item around the class, and have the students take careful note of the properties of the object—its size, weight, how it is made, shape. This analysis can involve the use of instruments such as scales and callipers. Ask the students to make an analogy with a known item that has similar properties, and suggest some activities that the unknown item would be suitable for. If possible, experiment with some of the students' ideas to see if the mystery artifact would indeed perform well in the way suggested. Discuss which is the best interpretation of the item—the interpretation that is most consistent with all of the properties of the artifact. Finally, tell the students what the item is actually supposed to be used for.



The point of the activity is that all artifacts are unknown when they emerge from the ground. The archaeologist must assign meaning to the object by comparing it with objects with which he/she is familiar. This process can be almost instantaneous, it might take months of research to find a suitable analogy, or a suitable interpretation might never be uncovered.

## 7. ANALYSIS AND CLASSIFICATION

Archaeology is much more than excavation. Elaborate activities can be based upon what happens in the laboratory—artifact analysis and classification.

### Target Group

Can be adapted for grades 1 and up.

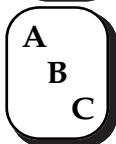
### Purpose

To illustrate one way that archaeologists group artifacts for analysis.  
 To illustrate that archaeological classifications usually have greater significance than simply groups of similar artifacts—the distinguishing group characteristics relate to artifact age or function.  
 To illustrate the importance of finding artifacts in context.

### Activity



Dump a box of assorted buttons on the desk (or have each student bring a selection of buttons from home). With students working individually or in small groups, give each group a handful of buttons. Have the students divide their buttons into groups of similar buttons (based upon whichever characteristics they want—size, colour, shape, number of holes, what they are made of). Lead a discussion about the classifications that the students developed:



Why did you divide the buttons the way you did?

What do the differences between the groups mean? (For example, are different groups of buttons used for different purposes?).



These are difficult question to answer because the characteristics upon which the classification is based were arbitrarily chosen.

But what if the buttons were found during an excavation by an archaeologist? Then there would be other types of information available 1) to help decide which criteria are important in classifying the buttons, and 2) to help interpret the meaning of the categories. For example, buttons found in the following stratigraphic context would suggest some interesting ideas.

Plastic buttons
Metal buttons
Bone buttons and wood buttons
no buttons present

Using the example of site stratigraphy illustrated above, or another similar one, discuss the importance of finding artifacts in some context. The additional information of artifact context helps answer a number of questions such as the following:

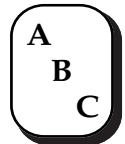
Did the clothing worn by the people who left behind the buttons change through time? (changing methods of fastening, and style of fastening)

What does the change in the material used to make the buttons tell us? (changing technology, changing style preferences)



If precontact artifact collections are available from a local collector or museum, the above activity can be repeated for artifacts. Artifact groups can even be divided into subgroups, particularly if a wide variety of tool and material types are present.

The button activity can also be related to one of the projectile point classification systems used by the archaeologists in Saskatchewan (illustrated on the timelines, Figures 7 and 8). Have students use what they have learned about button classification to write a brief report about changes in point styles through time. A preliminary class discussion could consider the following questions:



What do differences in point size and style mean? (different people may have made them, the people's style preference changed, different weapons were used)

Could the sequence have been determined without the excavation information which revealed which points lie close to the surface and which are deeper?



## 8. GARBAGE CAN ARCHAEOLOGY

This activity is adapted from one by Patti Bell (see "References for Teaching Archaeology in Schools", Chapter 8). Archaeologists study the things that people leave behind—in other words archaeologists study other people's garbage. Garbage cans are great for explaining the law of superposition, as new garbage is deposited on top of garbage that was already in the can. By using familiar materials such as our own garbage, students are better able to understand archaeological ideas and techniques.

Target Group

Suitable for grades 5 to adult.

### Purpose

- To illustrate that archaeological methods can be applied to our own culture.
- To illustrate the stratigraphy and how it relates to age of materials.
- To gain practice in careful observation and recording of information.
- To practice interpreting the meaning of groups of artifacts in context.
- To practice working in groups to organize tasks and reach consensus in interpretations.

### Materials Required

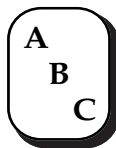
- several pairs of rubber gloves (preferably one pair per student)
- one full garbage can per five students
- one plastic drop sheet per each group (could be large garbage bag opened up)
- note pads and pencils

### Activity

Collect cans of garbage from different parts of the school, or bring some from home. Try to get ones with little or no wet material. This activity is best done in a large open area such as a gymnasium or out of doors, although it can also be done in a room with several large tables. Divide students up into groups of a maximum of five. Each group receives a drop cloth, several pairs of rubber gloves and a can full of garbage. The group must organize themselves and designate one person as record keeper, and another as spokesperson.



The students lay the drop cloth out and begin “excavating” their garbage can—carefully removing items, beginning at the top. Each item is placed on the drop cloth. The students identify each one, and analyse it for any information that could help them understand who the people were who threw it away, what activity they used it in, and when they disposed of it. The record keeper identifies each item by number and writes down as many of the student observations concerning that item as possible. After they have completed the garbage can excavation, or when 30 minutes remain in the time allotted for the activity, the students can discuss within their group what they have discovered about the garbage can culture by answering some of the following questions:



- What activities are represented by the garbage?
- When did the activities take place?

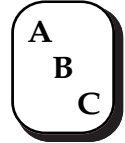
In what order did the activities occur, if there is more than one activity represented?

What is known about the people who threw away these items? Who were they, and how many were there?

Where did the garbage cans come from?



Finally, have each group in turn share what they have discovered about their garbage cultures with the rest of the class. The spokesperson for the group can lead the explanation, but other students in the group should be encouraged to add comments when the spokesperson has finished. The rest of the class can then suggest alternate interpretations for the garbage. An optional conclusion for this activity would be for each student to write a report about the activity, explaining their interpretations and exploring the assumptions behind those interpretations.



## 9. SIMULATED EXCAVATION

### Target Group

Can be adapted for grades 4 and up.

### Purpose

To practice excavation and interpretation techniques used by archaeologists.

To exercise a variety of critical and creative thinking skills.

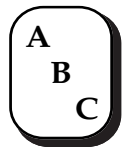
To practice working cooperatively in group situations.

### Activity

An excellent step by step description of how to set up a simulated excavation is described in the Archaeological Survey, Provincial Museum of Alberta's Dig and Discover: Archaeological Excavation for the Classroom (see "Fact Sheets", Chapter 8). The Sask. Ed. Grade 9 Social Studies Activity Guide also contains instructions for a simulated excavation (Activity 6 in the pilot version of the guide). Students can create their own sites or the teacher can create a site (perhaps in the high jump or long jump pit in the school yard).

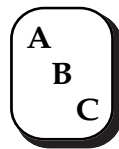


Try to ensure that proper archaeological techniques are followed as closely as possible to avoid the deterioration of the activity into a treasure hunt. Relate the units to a grid system, and use small tools (trowels, spoons, grapefruit knives, etc.) to carefully scrape away the soil. Make sure that notes are carefully recorded. This kind of activity will only work if mean-





ingful patterns of artifacts are buried, because the activity should depend as much upon interpretation of where things were found as what things were found. Because archaeologists depend upon the law of uniformitarianism, students should be able to make interpretations about what they find during an excavation by considering what they would have to do to leave behind the same patterns of artifacts.



Final projects could include a catalogue of artifacts (containing a description of each artifact and where it was found), and a final report including information about the methods that were used, the results of the excavation, and an interpretation of those results.

## 10. FIELD TRIPS

### 10A. TOURS OF ARCHAEOLOGICAL EXCAVATIONS

#### Target Group

Grade 4 and up (and younger students if there are opportunities for special activities at the site)

#### Purpose

The purpose of the activity can vary with the desires of the teacher and archaeologist

#### Activity

One of the best ways to learn about archaeology is to visit an active excavation with opportunities for class participation. Unfortunately, these opportunities are rare. They should be taken advantage of whenever possible, even if the timing of the trip is not ideal. Most archaeological projects are too small and of short duration to provide opportunities for school groups. Without a doubt, if an archaeological project is capable of incorporating school tours into their schedule, they will advertise this service to local school boards and museums.

Archaeological excavation can only be done in the warmth of summer, usually some time from the middle of May to the end of September. This leaves little time for school groups to become involved, even if both the schools and archaeologists are willing. The core area study sections into which archaeology fits most easily are usually taught outside the short field season, making out-of-school trips difficult to coordinate.

There are several solutions to these problems. One is to book the tour whenever the opportunity presents itself, and tie it in to your curriculum in whatever way you can (see Chapter 6 for some ideas). Another possibility is to have a more limited tour of an archaeological site with surface features, such as a tipi ring site, a medicine wheel, or a rock art site (see Activity 10B). A final option is the simulated excavation activity which could be carried out in the high jump pit in the school yard, or in a neighbourhood lot (see Activity 9).

If a tour of an archaeological site is possible, there are several points to keep in mind. Tours of excavations are most interesting for students in at least grade 4, particularly if the archaeologists are not prepared with specific hands-on activities. Find out the following information before visiting the site:

1. how to get there
2. if there are any group age and numbers restrictions
3. what to bring and what to wear
4. what kinds of activities will take place and
5. what kinds of preparation can be done in class before the tour.

Archaeological projects vary greatly in their degree of school program development. Some have special staff to deal with school groups, and developed tour outlines. Others have no formal tour agenda, but are willing to accommodate school groups whenever possible. Although the archaeologist will usually guide the school group, it is sometimes necessary for the teacher to take the lead in instructing the class during the visit.

If a teacher or archaeologist is giving a tour of an archaeological site or excavation, they should be sure to include the following information:

1. Students should understand what archaeology, artifacts, and sites are.
2. The purpose of the archaeological research at the site being visited should be explained, as well as how the site was discovered.
3. The site should be placed into the context of Saskatchewan history or the precontact period.
4. The nature of archaeological excavation should be briefly explained, using the activities at the site being visited as an example.
5. Emphasize the fact that all aspects of the excavation are recorded in notes, drawings, and photographs.
6. Students must achieve some understanding of how archaeological materials are interpreted to explain something about life in the past.

7. Archaeological sites and materials are delicate and important. They must be treated with respect.

## 10B. TRIPS TO ARCHAEOLOGICAL SITES WITHOUT EXCAVATIONS

Even if there are no active excavations in your area, undeveloped archaeological sites can provide opportunities for other activities: finding features or mapping the site. If you want to visit an undeveloped archaeological site for a field trip, there are several steps to take.

The first step is to plan what type of activity you want to do. Excavation is out of the question without the involvement of a professional archaeologist and crew (which runs into large expenses). School groups would be better prepared to find all of the features in the site, and make an accurate map of the site (see Activity 3B). Individual features such as tipi rings or cellar depressions can also be measured, described, and drawn to scale.

1  
2  
3

The second step is to find a suitable site. Archaeological Resource Management (787-2809, see Chapter 9) is a government organization that keeps an inventory of all archaeological sites in Saskatchewan. Staff at Archaeological Resource Management will be able to suggest a suitable site in your area. If you know of a site that has never been recorded, you should consider filling out a Saskatchewan Archaeological Resource Record form so that the site will be added to the provincial inventory (this can be developed into a classroom activity in itself). Forms and assistance are available from Archaeological Resource Management.

A  
B  
C

Third, and before visiting the site, obtain permission from the landowner. Either travel to the site to get an idea of the vehicle access, terrain, and visible archaeological features, or ask the landowner about the site and its surroundings. This will save unnecessary work if the site or its location is not really suitable.

A  
B  
C

The fourth step is to do some background research on the site. For example, if the site is an early homestead, the class could write to the Saskatchewan Archives Board (University of Saskatchewan, Saskatoon, S7N 0W0) and try to find out the name of the landowner.

The fifth step is to apply for an archaeological permit from Archaeological Resource Management. This involves describing the site location and the activity. Filling out a permit proposal a useful learning experience for the class in itself. Forms and assistance are again available from Archaeological Resource Management. Under proposed amendments to the Heritage Properties Act, it would be necessary to hold permits only

for those school activities that would have a lasting impact upon the site (because they involved collecting artifacts, for example). If these amendments are passed, activities such as mapping sites would not require permits.

The sixth step is to prepare the class by discussing the activity. Include a thorough discussion of rules in the field.

1. Close all gates as soon as you go through them
2. Do not chase cows or other farm animals
3. Do not litter
4. Finally and most importantly, **DO NOT REMOVE OR DISTURB ARTIFACTS**. If someone picks up a stone tool, bone fragment, or piece of metal, make sure that they put it back down in exactly the same place. In that way, an archaeologist studying the site later will find the artifacts in their original locations.

The seventh step is the field work itself. It is essential to instill a sense of the importance of the research on the students. The goal is to get as much information as possible about the site so that the class can gain a better understanding of the lives of people in the past. But at the same time, the class has a responsibility to preserve the site so that it can be studied by individuals in the future.



Field work can be followed by analysis of the data, report writing, journal writing, or classroom presentations.



## **CHAPTER 8: RESOURCE MATERIALS AVAILABLE**

This section is a database of materials (books, videos, films, etc.) on the subject of archaeology which would be of interest to educators. Many of these resources would be more useful for teachers in developing their own curriculum, than for students in acquiring an introduction to the subject. Where the information is available, the suggested target group has been specified.

### **WEB SITES**

One of the best ways of getting up-to-date information about organizations, publications, and other resources is to check out the internet. Included below are some local websites and some of the useful ones further abroad as of March 1999.

**[www.lib.uconn.edu/ArchNet](http://www.lib.uconn.edu/ArchNet)**

ArchNet is archaeology's "virtual library", and contains links to archaeological resources available on the internet of interest all over the world. It is a great place to start, whether looking for teaching resources or research information. Internet resources are listed by subject and geographic region.

### **SASKATCHEWAN WEB SITES AND OTHERS IN CANADA**

**[www.saskculture.sk.ca/sas/](http://www.saskculture.sk.ca/sas/)**

Information about the Saskatchewan Archaeological Society and its programs.

**[www.saskriverbasin.ca/wanuskewin/body.html](http://www.saskriverbasin.ca/wanuskewin/body.html)**

An introduction to Wanuskewin Heritage Park located just north of Saskatoon, and its resources.

**[www3.sk.sympatico.ca/stvictor/index.htm](http://www3.sk.sympatico.ca/stvictor/index.htm)**

Friends of St. Victor Petroglyph website provides an introduction about this important site located in south-central Saskatchewan.

**[www.umanitoba.ca/anthropology/manarchnet/](http://www.umanitoba.ca/anthropology/manarchnet/)**

Manitoba Heritage Network contains a cultural history of the province and information about important archaeological sites.

**[www.usask.ca/antharch/](http://www.usask.ca/antharch/)**

The University of Saskatchewan Department of Anthropology and Archaeology website describes the program and staff members.

**[www.canadianarchaeology.com](http://www.canadianarchaeology.com)**

The Canadian Archaeological Society website contains information about the organization, its policies, and a database of abstracts from articles that have appeared in its journal. The website also has links to Anthropology / Archaeology department websites and other websites of interest.

**[www.cmcc.muse.digital.ca/cmchome.html](http://www.cmcc.muse.digital.ca/cmchome.html)**

The Canadian Museum of Civilization website has loads of pictures and information about Canadian History and Archaeology.

**[www.interlog.com/~jabram/elise/archres.htm](http://www.interlog.com/~jabram/elise/archres.htm)**

Archaeology in Education is an Ontario website that highlights Canadian websites of archaeological interest as well as a wide assortment of other resources. Specializes in historic archaeology.

**[www.rom.on.ca/eyouths/funstm.html](http://www.rom.on.ca/eyouths/funstm.html)**

This website is Fun Stuff - Royal Ontario Museum - Worlds to Explore. It includes four interesting areas to explore:

Archaeological Analysis—Pieces of the Past; useful information and an artifact analysis exercise to help understand site stratigraphy and artifact interpretation.

Archaeology in Belize and the Caribbean—information about ongoing research.

Cuneiform to Computers—includes instructions for making an “ancient” Egyptian relief.

Dig @ ROM describes a university fieldschool dig of an Iroquoian Village site in Vaughan, Ontario.

**[www.sfu.ca/archaeology/museum/detectiv/intro.htm](http://www.sfu.ca/archaeology/museum/detectiv/intro.htm)**

Simon Fraser University Museum of Archaeology and Ethnography has put together a website for kids called "DhRI 16 Science of Archaeology" where they learn about an archaeological site and how it is studied.

**[ted.educ.sfu.ca/people/staff/jmd/archaeology/](http://ted.educ.sfu.ca/people/staff/jmd/archaeology/)**

Voyage Into Archaeology is a Canadian interactive archaeology resource that's informative and interesting.

#### **WEB SITES FROM THE U.S. AND ELSEWHERE**

**[www.he.net/~archaeol/](http://www.he.net/~archaeol/)**

The *Archaeology Magazine* website contains online articles as well as information about the magazine (see "Books and Periodicals" section in this chapter).

**[www.tamu.edu/anthropology/news.html](http://www.tamu.edu/anthropology/news.html)**

The Anthropology in the News website, out of Texas A&M University is an vast, regularly updated resource of media reports about archaeology from around the world.

**[www.nmnh.si.edu/departments/anthro.html](http://www.nmnh.si.edu/departments/anthro.html)**

Click on "The Anthropology Outreach Office" to get to *AthroNotes* online as well as to view the list of other educational resources available for downloading from the Smithsonian Institute (check out "Archaeology, leaflet and bibliography on North American archaeology" for a brief introduction to archaeology and a good bibliography).

**[www.cr.nps.gov/](http://www.cr.nps.gov/)**

The National Parks Service Links to the Past has information about archaeology in the parks, as well as a publications list and a list of available educational materials.

**[www.anth.ucsb.edu/videos/index.html](http://www.anth.ucsb.edu/videos/index.html)**

Archaeology On Film - An Electronic Database of Archaeology Film Reviews maintained by the University of California Santa Barbara Anthropology web site managers offers information on a wide variety of archaeological films and videos.

**[www.uiowa.edu/~anthro/arched/pubed.html](http://www.uiowa.edu/~anthro/arched/pubed.html)**

The Public Education in Archaeology web site has some links worth checking out

**[www.museum.state.il.us/ismdepts/anthro/dlcfaq.html](http://www.museum.state.il.us/ismdepts/anthro/dlcfaq.html)**

David Carlson of Texas A&M University has put together "Frequently Asked Questions About a Career in Archaeology in the U.S.". Although there is no Canadian content, there is lots of information of interest to anyone wanting to know more about the career of archaeology.

**[home.worldnet.fr/clist/Anthro/index.html](http://home.worldnet.fr/clist/Anthro/index.html)**

Anthropology Resources on the InterNet has a substantial Archaeology section of web site links.

**[www.ties.k12.mn.us/~mayatch/mq96/lesson/Archaeology/](http://www.ties.k12.mn.us/~mayatch/mq96/lesson/Archaeology/)**

Lesson Plans / Activities for Archaeology Themes from MayaQuest, an interactive and ongoing internet activity that involves students in an archaeological quest to discover the cause of the collapse of Mayan civilization. Although many of the MayaQuest components are only available to subscribers, these lesson plans and activities are available to anyone.

**[borealis.lib.uconn.edu/archnet/topical/theory/sampling/sampling.html](http://borealis.lib.uconn.edu/archnet/topical/theory/sampling/sampling.html)**

Archaeological Sampling Strategies provides a brief interactive exercise illustrating the different sampling methods used to find archaeological sites and artifacts.

**[www.execpc.com/~dboals/arch.html](http://www.execpc.com/~dboals/arch.html)**

Archaeology and anthropology for K-12 teachers provides a wide assortment of links to web sites of interest, including Universities, museums, and teaching resources.

**[tqd.advanced.org/3011/indexge.htm](http://tqd.advanced.org/3011/indexge.htm)**

Archaeological Adventures has good information about archaeology, including a glossary with realaudio pronunciations of terms. The examples it uses to illustrate archaeological problems and techniques are Old World.

## FACT SHEETS

### Alberta Culture Historic Sites Service

The Historic Sites Service, in cooperation with the Archaeological Survey at the Provincial Museum of Alberta, designed a series of brief fact sheets in the late 1980s to complement Head-Smashed-In Buffalo Jump Interpretive Centre programs. Western Heritage Services has obtained permission to copy and distribute these fact sheets (see Chapter 9 for more distribution information).

#### Archaeology

This is a good introduction to archaeology and how the science has been applied to this important site.

#### Ethnography and Ethnology

The importance of ethnographic and ethnologic information in interpreting precontact archaeological sites is discussed.

#### The Plains People of Southern Alberta: The Blackfoot

This brief description of the life style of the Blackfoot and how they adapted to changing seasons and conditions is a good example of a Plains Indian culture.

#### Plant and Animal Resources

This fact sheet describes the different plants and animals used by Plains Indians and what they were used for.

#### The Plains Bison

This fact sheet describes the plains bison, characteristics of its behavior, and its importance to the Plains Indians.

#### Hunting Techniques

Five different precontact methods for hunting plains animals, particularly bison, are described. Each depended upon a knowledge of animal behavior and the environment.

#### The Anatomy of the Jump

Although describing Head-Smashed-In in particular, this can be used in discussing the characteristics shared by successful buffalo jumps, and the evidence that remains for archaeologists to uncover.

### **Archaeological Survey at the Provincial Museum of Alberta**

In the late 1980s, the Archaeological Survey at the Provincial Museum of Alberta produced an excellent series of four fact sheets for educators. Although they contain information specific to Alberta, much of the material is applicable to Saskatchewan. The fact sheets are available for the cost of copying and mailing from Western Heritage Services (see information in Chapter 9).

#### Alberta Archaeology in the Classroom: A Resource List for Teachers

This is a detailed (though now somewhat out-of-date) resource list which contains audio-visual materials, print materials, films and slide sets, multimedia kits, and teacher references.

#### Archaeology as a Career

This contains detailed information about the nature of archaeology as a career and how best to pursue it. It also contains suggestions for activities for students in grades 9-12.

#### Dig and Discover: Archaeological Excavation for the Classroom

Details of excavation methodology, artifact analysis, and how best to plan and conduct a simulated excavation are discussed. This fact sheet is highly recommended for anyone wishing to embark on a simulated excavation, or anyone wishing to devise other activities which develop excavation skills.

#### Prehistoric Technology

Alberta's prehistory and early history are detailed, followed by a discussion of precontact tools and how they were made, and suggested classroom activities.

### **National Parks Service Archaeology and Ethnology Program**

The National Parks Services in the United States has a number of publications to help educators teach archaeology to K-12 students. For any of the following publications, write

Publications  
Archeology and Ethnography Program (2275)  
National Park Service  
1849 C St. NW  
Washington, DC 20240

phone (202) 343-4101

or order on the web: [www.cr.nps.gov/](http://www.cr.nps.gov/) (check out the "Guide to Classroom Re-

sources and Programs”).

### Everything We Know About Archeology for You to Use in Your Classroom

The purpose of this packet, originally presented to the Heritage Education Fair in 1990, is to identify some educational materials concerning archeology and archeological methods that are available for classroom teachers. Included is a number of articles and essays on archeology in school programs, in addition to lesson plans for teaching about cultural history and site preservation.

### Archeology and Education: The Classroom and Beyond

The Public Education Committee of the Society for Historical Archeology responded to the need to make information about archeology more accessible to the public by sponsoring a symposium that resulted in this collection of papers. From an evaluation of historical archeology curriculum at the undergraduate level to a discussion of elementary and secondary curricula, these articles provide useful information on various programs’ successes to help educators develop their own public outreach strategies.

## **VIDEOTAPES AND FILMS**

### **British Broadcasting Corporation**

The Footsteps series, by the BBC and run on the Arts and Entertainment Network are valuable videos on archaeological subjects. Titles of archaeological interest include:

Australia’s Twilight of the Dreamtime

Lost City of the Incas

Images of Another World

Mysteries of Mankind

Children of Eve

Official copies of these programs can be obtained by contacting:

British Broadcasting Corporation (BBC)  
Broadcasting House  
London, England  
W1A 1AA

## **Cable Regina and the Saskatchewan Archaeological Society**

### Discovering Saskatchewan's Past

This valuable series of twenty half-hour programmes were produced in 1987 to 1989. They deal with almost every aspect of Saskatchewan archaeology. Lists of titles and copies of the programmes are available for loan to members from the Saskatchewan Archaeological Society office (see Chapter 9). Sales of the copies can also be arranged.

## **Royal Saskatchewan Museum**

Two films were produced in the late 1970s by the Museum on the topic of archaeology. Both were aimed at general audiences. They are available for loan from

Dr. Margaret Hanna  
Curator of Archaeology  
Saskatchewan Museum of Natural History  
2340 Albert Street  
Regina, Saskatchewan  
S4P 3V7

### Carlton's Buried Past

This film describes the archival research and archaeological excavation that was necessary to accurately reconstruct the fort at Fort Carlton Historic Park. It provides a history of the fort, from its establishment in 1810, through its destruction in 1885 and to its reconstruction. The film is a good illustration of how archaeology can act as an important tool in understanding the history of an area. (25 min. 55 sec.)

### The Past in Place

This film explains the importance of archaeological site preservation. Because archaeologists are trying to maximize the information they gather about a site, they must study artifacts in context. That is why they dig carefully and record detailed notes. If sites are disturbed, whether they are eroded by nature or destroyed by human actions, most of that information is lost. (18 min. 33 sec.)

## **Wanuskewin Heritage Park**

### The Secrets of Wanuskewin

This videotape presents an introduction to the Wanuskewin Heritage Park. Although the archaeology at the park is mentioned, the video focuses upon the spiritual significance of the site to the Indians past and present. (1987, video, 25 min.). It is available through the Wanuskewin Heritage Park Office (see Chapter 9).

## **National Film Board of Canada**

The National Film Board distributes a number of films and videos dealing with archaeological topics. Films are available through many public libraries in the province.

### The Dig

This film highlights methods used by one British Columbia highschool teacher to bring archaeology alive for his students through excavations of simulated sites and innovative classroom exercises. (1990, film or video, 22 minutes)

### The Land that Devours Ships

Underwater archaeology is the topic of this programme; it follows archaeologists as they explore the H.M.S. Breadalbane, that sank in the Arctic Ocean in 1853. (1984, film or video, 58 min., 15 sec.)

### The Lost Pharaoh: The Search for Akhenaten

Canadian archaeologist Dr. Donald Redford pieces together the life of the pharaoh Akhenaten. (1980, film or video, 56 min, 35 sec.)

### The Mystery of Bay Bulls

Parks Canada's underwater archaeological excavation of Sapphire, a 300 year old frigate, is followed. (1979, film only, available from Winnipeg, 13 min., 58 sec.)

### The Vinland Mystery

The only Norse settlement in North America, L'Anse Aux Meadows, is the subject of this archaeological investigation. (1984, film and video, 28 min., 59 sec.)

## **National Geographic Society**

The National Geographic Society covers archaeological subjects regularly in its magazine and in its television programs. For more information, contact:

National Geographic Society  
17<sup>th</sup> and M Streets, N.W.  
Washington, DC 20036  
phone number: (202) 857-7000

## **Public Broadcasting Service (PBS)**

Programs such as NOVA and Odyssey on PBS often deal with archaeological

themes. Although expensive, these three interesting videos are available for sale from

Public Broadcasting Service (PBS)  
1320 Braddock Place  
Alexandria, Virginia.  
phone number: (703) 739-5000

### Buried in Ice

From the Nova series, this is a documentary about the multi-disciplinary study of the graves of individuals involved in the failed Franklin expedition in search of the Northwest Passage. Suitable for highschool students. (1988, 60 min).

### Other People's Garbage

This is one of the Odyssey series. Archaeologists, anthropologists, and historians learn about another way of life from the things it threw away. Suitable for grades 7-12. (1984, 60 min).

### Seeking the First Americans

Another in the Odyssey series, archaeologists across the United States search for clues about the first North Americans. Suitable for high school students. (1984, 60 min).

## **FILMSTRIP AND SLIDE SETS**

### **McIntyre Media Limited**

This company distributes filmstrips produced by other groups. They provide free previews of their materials. For catalogues, prices and distribution information, phone 1-800-268-1470 or write

McIntyre Media Limited  
30 Kelfield Street  
Rexdale, Ontario  
M9W 5A2

### Canadian Arctic Prehistory

### Ontario Prehistory

### The Prehistory of the Maritimes

### The Prehistory of Newfoundland and Labrador

### The Prehistory of British Columbia

### Quebec Prehistory

These are part of the Canada's Visual History series of slide sets. Each set includes 30 colour 35 mm slides on the topic of the prehistory of a specific region in Canada. They are an excellent resource and good value. The accompanying teacher's guide contains an annotation for each slide, a bibliography and suggested classroom activities. They were produced by the National Film Board of Canada in cooperation with the Canadian Museum of Civilization. Suitable for grades 9 to 12.

### Digging Up Canada's History

This set of four filmstrips, four cassettes, and a teacher's guide was produced by the National Film Board of Canada in cooperation with the Canadian Studies Directorate. They provide an overview of archaeology suitable for grades 7 to 12. Individual filmstrips are "Archaeologists in Action", "Head-Smashed-In Buffalo Jump", "Red Bay and the Basque Whalers", and "Acadian House". The set costs \$219.45 (subject to change).

### Discovering the Past

This set of three filmstrips, three cassettes, and three teacher's guides focuses on the Classical Archaeology of ancient European and Mediterranean civilizations. Individual filmstrips are "The Skills of the Archaeologist", "Digging Up History", and "Evidence in Writing".

### To Know the Hurons

This kit contains four filmstrips, four cassettes, four teacher's guides, 20 colour 35 mm slides with notes, five replicas of Huron artifacts, eight student activity cards and two maps. It was produced in cooperation with the Canadian Museum of Civilization and teaches archaeology and Ontario prehistory through a discussion of an archaeological dig at a Huron site.

### Canadian Indian People

This set of two filmstrips and audio tapes comes with a teacher's guide. The first of the strips is #503, Indian Arts and Crafts, which examines arts from precontact times until present (1976). The second is #504, The Medicine Wheel, examines the importance of the circle as a symbol. The strips are available from

E.T.H.O.S.  
2250 Midland Avenue  
Unit 9  
Scarborough, Ontario  
M1P 1G6.

### **Saskatchewan Archaeological Society**

#### Studying Saskatchewan's Ancient Human History

The Saskatchewan Archaeological Society lends a set of 55 colour slides, 20 min. 30 sec. cassette tape, and transcription to interested individuals free of charge. The slide show provides an introduction to Saskatchewan archaeology by illustrating some of its famous sites and artifacts. The text is most suitable for grades 6 to adult. For more information or to make bookings, contact the Saskatchewan Archaeological Society (see Chapter 9).

### **ARTIFACT REPLICAS**

There are companies that specialize in making realistic replicas of stone, bone, antler, and shell artifacts from various times and places. For catalogue or further information, contact

Lithics Artifacts Casting Company  
Susan Heller  
198 Binnington Road  
Buffalo, New York 14226

or

Lithic Casting Lab  
Route 1, Box 102  
Troy, Illinois 62294

### **REFERENCES FOR TEACHING ARCHAEOLOGY IN SCHOOLS**

As time goes by, more and more archaeologists and educators are discovering the benefits of introducing students to archaeological concepts at a young age. Periodicals and publications which provide ideas in curriculum development are becoming increasingly common.

## PERIODICALS

### Anthro. Notes

This is a National Museum of Natural History Newsletter for Teachers. It is published three times a year and is distributed free of charge. It contains articles about a variety of anthropological topics, suggested activities, reference materials, and summer fieldwork opportunities. To be added to the mailing list, contact

P. Ann Kaupp  
Public Information Office  
Department of Anthropology  
Stop 112  
Smithsonian Institution  
Washington, DC 20560

### Archaeology and Public Education

This newsletter was established in the Fall of 1990 and is published three times per year by the Public Education Committee of the Society for American Archaeology. Their aim is to aid all kinds of people who teach the public about the value of archaeological resources and research. It is available by subscription (\$10 U.S. per year) by writing

Archaeology and Public Education  
Society for American Archaeology  
900 Second Street, N.E., Suite 12  
Washington, DC 20002  
phone (202) 789-8200; fax (202) 789-0284

### Teaching Anthropology Newsletter

This Canadian periodical is published free of charge twice annually. It promotes pre-university anthropology by providing curriculum information to teachers, creating a forum for an exchange of ideas, and establishing a dialogue between teachers and professors of anthropology. The Fall 1990 (Number 17) edition was devoted to precollege archaeology, but most of the issues. To be added to the mailing list, contact

Teaching Anthropology Newsletter  
Department of Anthropology  
St. Mary's University  
Halifax, Nova Scotia  
B3H 3C3  
phone (902) 420-5628, fax (902) 420-5119

## OTHER PUBLICATIONS

### Archaeology and Education: A Successful Combination for Precollegiate Students

Edited by Karen Ann Holm and Patricia J. Higgins

This publication is an excellent collection of eleven articles by teachers and archaeologists and a valuable annotated bibliography. All illustrate how archaeology can be used in teaching K-12 students. The papers had originally been presented at meetings of the American Anthropological Association in 1983 and the XI International Congress of Anthropological and Ethnological Sciences. Although the publication is out of stock at the University of Georgia, Western Heritage Services has obtained permission to reproduce it and distribute it (see Chapter 9)

### Archaeology in the Classroom

Compiled and edited by Wendy O'Brien and Tracey Cullen.

An extensive resource guide to archaeological curriculum materials, books, films, museum programs, educator training, and archaeological excavations for grades 1-12. The guide is fully indexed by grade level, local state resources, and the thematic focus of the individual material. Also included in the guide are supplemental bibliographies and resource lists of related archaeological organizations. The publication is available for \$10.50 plus \$4.00 S/H from

Archaeological Institute of America  
656 Beacon Street, 4th Floor  
Boston, MA 02215-2006  
phone: (617) 353-9361

### Can You Dig It? A Classroom Guide to South Carolina Archaeology

Nancy Hawkins, Stanley South, Tom Charles, and Margaret Walden

This useful manual is published by the South Carolina Institute of Archaeology and Anthropology and describes archaeological activities for teachers to use. It is intended for South Carolina educators (it lists sites and museums in the state, for example) but can be adapted to suit other areas. To obtain copies, contact

South Carolina Institute of Archaeology and Anthropology  
Bruce Rippeteau, State Archaeologist  
1321 Pendleton Street  
University of South Carolina  
Columbia, South Carolina 29208

### Classroom Archaeology: An Archaeology Activity Guide for Teachers

Nancy W. Hawkins, 1984

This is a useful and comprehensive (180 page) educator's manual containing suggested resources and archaeological activities for students. Authorized copies are available for the cost of reprinting from Western Heritage Services (see Chapter 9).

Discovering Archaeology: an Activity Guide for Educators

Shirley J. Schermer, 1992

An introduction to archaeology for teachers at all levels, especially of middle school students. All activities have been field tested and are interdisciplinary. It is available for \$6.95 plus \$3.00 S/H (U.S. dollars) from

Special Publication,  
Office of the State Archaeologist,  
Oakton Hall, The University of Iowa,  
Iowa City, Iowa 52242.

Earthmaker's Lodge, Native American Histories, Folklore, Activities and Foods

Edited by E. Barrie Kavasch

A classroom and library resource book arranged by topic and geographical region of Native American peoples from the Arctic to Mexico and aimed at grades 4-9. Recommended for use in social studies, reading, and language arts classes. It is available for \$17.50 plus \$3.00 S/H (U.S. dollars) from

Cobblestone Publishing, Inc.,  
7 School Street,  
Peterborough, NH 034588  
(phone 800-821-0115).

Practicing Anthropology in Precollege Education

This is a special issue (Vol. 8, No. 31-4, 1986) of Practicing Anthropology. It contains a collection of fourteen articles by teachers and anthropologists about their efforts to bring anthropology into the classrooms of North America. Two of the articles are specifically archaeological, and include some curriculum ideas and suggested resources. It is available for \$5.00 (US funds) from

The Society for Applied Anthropology  
Business Office  
P.O. Box 24083  
Oklahoma City, Oklahoma 73124-0083

Proceedings 1988, American Society for Conservation Archaeology

Edited by A. E. Rogge and John Montgomery

The theme of this symposium was "Fighting Indiana Jones in Arizona", and papers dealt with many aspects of bringing archaeology to Arizona's public. Papers of particular interest to educators are "Archaeology is More than a Dig" by Shurban, and "Archaeology in the Classroom" by Bengé and Miller, but the other papers will provide some general ideas for innovative curriculum development. Copies of the conference proceedings can be obtained from

American Society for Conservation Archaeology  
c/o John Montgomery  
Station 9  
Eastern New Mexico University  
Portales, New Mexico 88130

Project Archeology: Saving Traditions (P.A.S.T.)

This is a flexible multi-disciplinary curriculum currently being tested in the United States. It uses archaeology as a vehicle for emphasizing skills needed for science, mathematics, social studies and language arts. The target grades are right from grade 1 through high school. It is presented in three units: *The Artifact*, *The Site*, and *The Culture*. For more information about content and prices of the entire curriculum or individual units, contact

Sopris West, Inc.  
1140 Boston Avenue  
Longmont, Colorado 80501

Protection of Archaeological Sites

Patti Bell, 1987

This is a collection of twenty activities developed for K-8 students. Although most are specific for Arizona prehistory, they contain some useful ideas. Available for the cost of printing from

Patti Bell  
P.O. Box 1858  
Bozeman, Montana 59771

Sleuthing Through History: An Introduction to Archaeology

Although concentrating upon Old World archaeology, this collection of pencil and paper exercises are useful for introducing archaeology, its purpose, selecting which sites to study, dating techniques and artifact function. The package includes a teacher's guide and reproducible student activities. It is most appropriate for high school students, although it could be adapted for younger ones. It is available from

Social Studies School Service  
10,000 Culver Boulevard  
Post Office Box 802  
Culver City, California 90230

## BOOKS AND PERIODICALS

### Archaeology

This is a magazine aimed at non-archaeologists which contains information about current research, new exhibits, books, and films. Travel guides published in spring issues each year provide information on sites in the Old and New Worlds that are open to the public for visits or volunteer opportunities. For subscription information, write

*Archaeology*  
P.O. Box 50260  
Boulder, Colorado 80321-0260

Beatty, Owen and John Geiger  
1988 Frozen in Time. Saskatoon: Western Producer Prairie Books.

This is a popular account of a multi-disciplinary study of the archaeological sites that remain from the failed Franklin expedition in search of the Northwest Passage. It would make fascinating reading for high school students and adults.

### British Archaeological News

This is a newsletter which contains information about current research, courses, and volunteer opportunities. It is available from

Council for British Archaeology  
112 Kennington Road  
London, England  
SE11 6RE

Chu, J.  
1982 Kidigger: Exercises in Critical and Creative Thinking Through Archaeology. Morestown, New Jersey (Box 402, Morestown, N.J., 08057).

This is a collection of 26 games and exercises that use archaeological

techniques to develop children's creative and critical thinking skills. The activities, ranging from vocabulary exercises to practicing outdoor survival skills, are aimed at grades 1-7.

Cook, Barbara and Sturand Reid  
1987     The Young Scientist Book of Archaeology. EDC Publishing, Tulsa, Oklahoma.

Although this publication has an Old World focus, it is a useful and stimulating introduction to archaeological techniques aimed at young teenagers.

Daniels, Steve and Nicolas David  
1982     The Archaeology Workbook. University of Pennsylvania Press, Philadelphia.

This contains exercises based upon information from real excavations. It is suitable for high school students.

Devine, Heather  
1989     Archaeology in Social Studies: An Integrated Approach. The History and Social Science Teacher, 24, 3, 140-147.

This article explores the many arguments for teaching archaeology at the K-12 level, ideas for field trip, excavation, and experimental archaeology activities.

Dyer, James  
1983     Teaching Archaeology in Schools. Aylesbury, England: Shire Publications Ltd.

Although aimed at the British school system and archaeological opportunities, this book contains many useful ideas for activities and resource materials for use by teachers (\$6.75).

Epp, Henry T.  
1991     Long Ago Today. Saskatchewan Archaeological Society, Saskatoon.

This is the first book dealing with Saskatchewan archaeology and precontact times that has been written for a general audience. It tells the story of the earliest people in Saskatchewan and how we have learned about them through archaeology. It would be suitable for older students (grades 9 - 12).

Epp, Henry T. and Ian Dyck

1983     Tracking Ancient Hunters; Prehistoric Archaeology in Saskatchewan. Saskatchewan Archaeological Society, Regina.

This is an important introduction to Saskatchewan archaeology, although it is too technical for most pre-university students and is already somewhat dated.

Fladmark, Knut R.

1978     A Guide to Basic Archaeological Field Procedures. Publication #4, Department of Archaeology. Vancouver: Simon Fraser University.

A comprehensive, step by step, guide to carrying out archaeological field investigations. Although rather detailed, this would be useful background for anyone attempting a simulated excavation who has never participated in actual archaeological fieldwork.

Gebhard, Krysztof M.

1985     Community as Classroom: A Teacher's Practical Guide to Oral Histories. Regina: Saskatchewan Archives Board. (3303 Hill Avenue, Regina, Saskatchewan, S4S 0X3).

This guide contains useful suggestions for organizing oral history projects. A copy of the guide was distributed in 1985 to each school with grades 7-12.

Hackwell, W. John

1986     Digging to the Past; Excavations in Ancient Lands. New York: Charles Scribner's Sons

This is a well illustrated book suitable for grades 5 and up. It introduces the reader to classical archaeology and its techniques.

Helgason, Gail

1987     The First Albertans. Edmonton: Lone Pine Publishing.

This popular book about Alberta archaeology was initiated by the Archaeological Survey of Alberta. It successfully brings the archaeological record to life, as the prehistory and early history of Alberta is described and illustrated in drawings which are both accurate and well-executed. Although the book was not written specifically for children, it could be enjoyed by students in grades 7-12. It is available through the Den of Antiquity (see Chapter 9).

Hole, Frank and Heizer, Robert F.

1977      *Prehistoric Archaeology: A Brief Introduction*. New York: Holt, Rinehart, and Winston.

This is a widely used introductory text on archaeology aimed at university level students.

Jones, Tim E. H.

1988      *Annotated Bibliography of Saskatchewan Archaeology and Prehistory*. Saskatoon: Saskatchewan Archaeological Society.

This is an important collection of titles of interest to Saskatchewan archaeology, with index and annotations. Most of the references are technical reports but the collection also contains popular journal and newspaper articles. It is available through the Den of Antiquity (see Chapter 9).

Knoll, Patricia C.

1990      *Listing of Education in Archaeological Programs: The LEAP Clearinghouse, 1987-1989 Summary Report*. Archaeological Assistance Division, National Park Service, U. S. Department of the Interior

This publication is a catalogue of information contained in a computerized database compiled by the National Park Service. The LEAP Clearinghouse contains information about public education ventures in the United States, from curriculums, to films, to newspaper articles, to public participation excavations. Contacts for all ventures are listed along with a description of the product or event. To obtain a copy of the catalogue, contact

Archaeological Assistance Division  
National Park Service  
U. S. Department of the Interior  
P.O. Box 37127  
Washington, DC 20013-7127

Linnamae, Urve and Tim E. H. Jones (eds.)

1988      *Out of the Past*. Saskatoon: Saskatoon Archaeological Society.

The Saskatoon Archaeological Society produced this book which explores the prehistory and early history of the Saskatoon area, through descriptions of some of its most important archaeological sites. The book is aimed at readers who already have some knowledge of archaeology, but could provide useful information for upper level students and teachers.

Macaulay, David

1979 Motel of the Mysteries. Boston: Houghton Mifflin.

This is a humorous account of a fictional excavation of a 20th century site in the year 4000 A.D. High school students could use this book as the basis for discussions about archaeology and how assumptions influence the interpretations that are made.

McGhee, Robert

1989 Ancient Canada. Canadian Museum of Civilization, Ottawa.

This is a beautifully illustrated volume describing sites across the country.

McNett, Charles W. Jr., Louana M. Lackey, and Ann S. Ferren

1985 Artifacts, Burials, and Computers: Teaching the ABC's of Archaeology Through New Curriculum Modules, in Archaeology and Education: A Successful Combination for Precollegiate Students. Karen Ann Holm and Patricia J. Higgins (eds.), pp. 77-84. The University of Georgia, Anthropology Curriculum Project, Athens.

A series of ten self-contained modules, including teachers' guides, aimed at teaching American Indian Archaeology to middle school students are described and evaluated. Information about the modules, and requests for copies of the modules and teachers' guides should be addressed to

Charles McNett, Jr.,  
Chairman  
Department of Anthropology  
The American University  
4400 Massachusetts Avenue NW  
Washington, DC 20016

Milanich, Jerald, and Susan Milbrath, editors

1989 First Encounters: Spanish Explorations in the Caribbean and the United States 1492-1570. University of Florida Press and the Florida Museum of Natural History, Gainesville.

These readable essays provide a blend of historical research and archaeology in an effort to illuminate the important events in the decades following 1492. They illustrate how archaeology can be used to illuminate historical problems. It would be suitable for upper level students.

Onderdonk, Richard

1986 Piaget and Archaeology. Archaeology. Nov/Dec: 80.

This article discusses the benefits of archaeological study to the cognitive development of students.

Pickering, Robert B.

1987 I Can Be an Archeologist. Chicago: Children's Press.

This provides a general introduction to the kinds of activities performed by archaeologists and physical anthropologists. It is aimed at beginning readers.

Pokotylo, David

1988 Blood from Stone: Making and Using Stone Tools in Prehistoric British Columbia. Vancouver: University of British Columbia Museum Note No. 11.

This publication resulted from a travelling museum exhibit about stone tool technology. In bilingual text, it includes a good introduction to techniques for making stone tools, interpreting scatters of stone tools at archaeological sites, and how these tools are used today by northern native peoples. It is aimed at adults, but would also be useful for upper level students.

Putt, Neal

1991 Place Where the Spirit Lives. Winnipeg: Pemmican Publications Inc.

Although specific to Manitoba, this well-illustrated book combines stories from archaeology and oral tradition of Manitoba's First Nations peoples. The result is a tremendous source of information about lifeways in North America for the past 11,000 years. Suitable for grades 6 through 9.

Resource Management—Archaeology, Heritage Branch

1991 Avocational Archaeology Field Manual. Saskatchewan Community Services, Regina.

This is a booklet for non-professionals interested in doing archaeological research in Saskatchewan. It provides information on obtaining archaeological permits, recording sites, mapping features, and collecting and recording artifacts. It is available from the Heritage Branch of Saskatchewan Family Foundation (see Chapter 9).

Robbins, Maurice and Irving, Mary B.

1981      The Amateur Archaeologist's Handbook (3rd edition). Cambridge: Harper & Row.

This is a non-technical description of how to do archaeological field-work, from planning, surveying, excavating, and analysing artifacts. It is aimed at adults, but could also be used by most high school students.

Saskatchewan Archaeological Society Newsletter

This quarterly newsletter is invaluable for keeping up with developments in Saskatchewan archaeology and opportunities for becoming involved. It is available free of charge to members of the Saskatchewan Archaeological Society (see Chapter 9 for details).

Smardz, Karolyn E.

1989      Toronto Students Dig Into Their Past! The Archaeological Resource Centre. Teaching Anthropology Newsletter. 14 (Spring): 2-7.

This article describes an elaborate archaeological program entirely funded by the Toronto Board of Education, and discusses the benefits of including archaeological research in pre-university education.

Snow, Dean R.

1990      The Archaeology of North America. New York: Chelsea House Publishers.

This is an introductory look at precontact archaeological sites and ancient cultures in North America. Suitable for ages 10 and up.

Stone, Peter and R. MacKenzie, eds.

1989      The Excluded Past: Archaeology in Education. London: Unwin Hyman.

This is a collection of papers which were presented at the 1st World Archaeological Congress in 1986. They explore the successes and failures around the world in bringing archaeology into the classroom. The title of the volume refers to the fact that much of human history was never written down—the history of precontact or indigenous peoples, the history of everyday living—and is overlooked in most history classes and textbooks. Archaeology is essential in telling the rest of the human story.

Such, Peter

1978

Vanished Peoples: The Archaic Dorset & Beothuk People of Newfoundland. NC Press.

This book describes cultures which, because of racism, did not survive long into the historic period. The information comes both from historical sources and from archaeological research. It is suitable for Social Studies 20 and 30. It is available from

Beaverbooks

150 Lesmill Rd.

Don Mills, Ontario

M3B 2T5

Tirrell, P. B.

1983

Archaeology for Elementary and Secondary Students, in *Anthropology and Multicultural Education: Classroom Applications*. Yolanda T. Moses and Patricia J. Higgins (eds), Athens, Georgia: The University of Georgia, Anthropology Curriculum Project. pp. 44-82. (zip code: 30602).

This article describes in detail two archaeology programs developed by the University of Oklahoma's Stovall Museum. The first is a sixth grade unit on prehistory which involves a simulated excavation, artifact analysis, and artifact reproduction. The second is a high school program in which students excavate at a site for two weeks under the supervision of Museum staff. An appendix contains a resource list and samples of classroom exercises.

## **CHAPTER 9: PUBLIC ARCHAEOLOGY IN SASKATCHEWAN**

The shortage of established curriculum materials and programs for use by Saskatchewan teachers is a problem. Several organizations are making attempts to improve the situation.

### **ARCHAEOLOGICAL RESOURCE MANAGEMENT**

Through understanding how people have interacted with their environment in the past, we gain perspective on the modern world, realizing the ingenious ways humans have found to solve the problems of survival. Archaeological sites hold a key to the past, and are a resource to protect so that everyone can benefit from the information that they contain. In Saskatchewan, the Heritage Property Act was established in 1980 to preserve our archaeological resources for the benefit of all people, now and in the future. Archaeological Resource Management, part of Community Support Services Branch - Heritage, is the provincial government body dedicated to enforcing this Act.

Archaeologists at Archaeological Resource Management are responsible for reviewing developments in the Province and determining which ones will likely have a negative impact on the archaeological sites of an area (either known sites or areas with high potential for having sites). Those developments that threaten archaeological sites must be preceded by archaeological research in the area; this research is usually done by private archaeologists and is paid for by the company doing the development. Archaeologists at Archaeological Resource Management must make sure that the necessary inventory of the area is done, and that any sites which are discovered are either studied thoroughly or else avoided by the developers.

An up-to-date inventory of all archaeological sites in the province is housed at the office of Archaeological Resource Management. Included in the inventory is information about where the site is located, what the surrounding environment is like, and what the site contains. At present, over 17,000 sites have been recorded in the province.

The Provincial Government grants permits to individuals who want to exca-

vate archaeological sites or collect artifacts. At present, only people holding Masters' degrees in archaeology, or who have equivalent experience doing research and reporting their findings, are qualified to excavate a site. People who do not meet those qualifications, but who can demonstrate that they are capable of carrying out the research, can obtain a Restricted Research Permit which allows them to survey and collect artifacts from the surface of a site. Archaeologists at Archaeological Resource Management are then responsible for making sure that the permit holder fulfils all of the permit requirements: recording sites, cataloguing artifacts, and submitting reports. Although all artifacts collected after the Heritage Property Act was established ultimately belong to the people of Saskatchewan, they may remain in the possession of the collector as long as they are properly recorded and the collection is made available to individuals wanting to study it. Collectors are encouraged to donate their artifacts eventually to a local or regional museum. The Royal Saskatchewan Museum in Regina is the main repository for archaeological materials in Saskatchewan (see "Saskatchewan Museums," below).

If someone should accidentally discover an archaeological site, they should not disturb it. Once disturbed, some of the information which a site contains is lost forever. Any questions about sites or artifacts that have been discovered, questions about recording sites or artifacts, or questions about the archaeological resources in the province, should be directed to

Archaeological Resource Management  
Community Support Services Branch - Heritage  
432-1855 Victoria Avenue  
Regina, Saskatchewan S4P 3T2  
phone: (306) 787-5772.

## **SASKATCHEWAN ARCHAEOLOGICAL SOCIETY**

The Saskatchewan Archaeological Society (SAS) is a group of individuals, professional archaeologists and non-professionals, who share an interest in archaeology. Chapters of the Society are located throughout the province, meeting on a regular basis for public lectures and occasional field trips to local archaeological sites.

The SAS is involved in many public education ventures. They have "Archaeo-Kits" available for loan to Saskatchewan Schools; these are filled with artifacts, artifact replicas, and information about Saskatchewan Archaeology. They provide seminars about archaeology in venues around the province several times each year. Long Ago Today, a popular book about Saskatchewan archaeology and life during the distant past, was published by the SAS. It is aimed at people who have no experience with archaeology. The Society also offers an annual field school, held at an archaeological site in the province, which provides non-professionals with instruction in

archaeological field and laboratory techniques.

The Society's quarterly newsletter and annual journal contain up-to-date articles about the archaeology of the province, and often advertise opportunities to visit or volunteer on archaeological sites.

The Den of Antiquity, a small bookstore located in the Society's business office, carries titles of archaeological interest. Although some of these are fairly technical in nature, others were written with non-archaeologists in mind. A complete title and price list is available from the Society. Some of the publications mentioned in Chapter 8 are sold through the Den of Antiquity, while others can be found in the SAS library which is also located at this office.

For more information about the Society, the local Chapter in your area, or Saskatchewan archaeology in general, contact

Saskatchewan Archaeological Society,  
#1 - 1730 Quebec Avenue  
Saskatoon, Saskatchewan S7K 1V9  
phone: (306) 664-4124.

## **WANUSKEWIN HERITAGE PARK**

Wanuskewin Heritage Park opened to the public in June 1992 to rave reviews. It is located 3 km north of Saskatoon. The visitor centre interprets the history and culture of the Northern Plains Peoples from precontact times to present. Within the park are 21 archaeological sites. The outdoor tours take the visitor past a medicine wheel, buffalo jumps, tipi rings and buffalo pounds. School tours can also be booked. Curriculum materials have been developed to compliment tours to the site or to be used independently. For more information, contact:

Wanuskewin Heritage Park  
R.R. #4  
Saskatoon, Saskatchewan S7K 1M7  
phone: 931-6767.

## **WESTERN HERITAGE SERVICES**

The archaeologists at Western Heritage Services, Saskatoon were responsible for putting together this handbook. The Saskatchewan School Trustees Association provided every school board in the province with a copy of the 1990 edition of the handbook which can be copied as needed for individual use. Copies of this revised edition can be downloaded or printed directly from your internet browser, and can

also be obtained by contacting

Maureen Rollans  
Western Heritage Services  
702 - 2nd Avenue North  
Saskatoon, Saskatchewan S7N 2E1  
phone: 975-3863

Western Heritage Services has also been committed to making archaeological research more accessible to the general public and schools in particular. In Chapter 8, it was indicated that some of the resources are available through Western Heritage Services. In order to obtain authorized photocopies of the original materials, or for more information about the Western Heritage's archaeological services, contact Maureen at the address above.

Charges for authorized photocopies are determined as follows: postage plus \$0.10 per page (these may be reduced with large orders). You will be sent an invoice which is to be paid upon receipt of materials.

The titles that are available from Western Heritage Services are as follows:

From the Archaeological Survey at the Provincial Museum of Alberta:  
Alberta Archaeology in the Classroom: A Resource List for Teachers (19 pp.)

Archaeology as a Career (12 pp.)

Dig and Discover: Archaeological Excavation for the Classroom (26 pp.)  
Prehistoric Technology (21 pp.)

From the Alberta Culture Historic Sites Service:

Archaeology (7 pp.)

Ethnography and Ethnology (3 pp.)

The Plains People of Southern Alberta: The Blackfoot (3 pp.)

Plant and Animal Resources (4 pp.)

The Plains Bison (3 pp.)

Hunting Techniques (4 pp.)

The Anatomy of the Jump (4 pp.)

Archaeology and Education: A Successful Combination for  
Precollegiate Students, edited by Karen Ann Holm and Patricia J.  
Higgins (116 pp.)

Classroom Archaeology: An Archaeology Activity Guide for Teachers,  
by Nancy W. Hawkins (179 pp.)

## **SASKATCHEWAN MUSEUMS**

There are several hundred museums in Saskatchewan. The main repository for archaeological materials in Saskatchewan is at the Royal Saskatchewan Museum in Regina. Archaeologists at the museum occasionally undertake public excavations, and are available to answer questions about artifacts and archaeological sites. For more information contact

Royal Saskatchewan Museum  
2340 Albert Street  
Regina, Saskatchewan S4P 3V7  
phone: 787-2815.

Local museums are also a valuable source of information about the history and precontact period of an area. Classroom trips to local museums can be rewarding, particularly when tied in with a specific unit of study. In addition, museums may have artifact collections which can be studied, or the staff may know of local collectors who can be contacted for information or artifact borrowing. Contact a museum in your area to find out about the services it can offer. For general information about Saskatchewan museums, contact

Museums Association of Saskatchewan  
2205 Victoria Avenue  
Regina, Saskatchewan S4P 0S4  
phone: 780-0297.

## **VOLUNTEER OPPORTUNITIES**

Many sites around the world welcome visitors and sometimes even archaeological volunteers. Some of these are developed archaeological sites with interpretive centres, such as Head-Smashed-In Buffalo Jump in southern Alberta. The Center for American Archaeology, Kampsville Archaeological Center (Kampsville, Illinois 62053) offers educational research programs for junior and senior high school students, non-professionals, and separate workshops for teachers.

Earthwatch is an organization which funds scientific field research projects on the condition that the project includes non-professionals as volunteers. Volunteers pay money to work for two weeks in the field of their choice. Each year, several archaeological projects are involved with the Earthwatch program. For more information, contact

Earthwatch  
The Center for Field Research  
680 Mount Auburn St  
P.O. Box 403  
Watertown, MA 02272.

Others archaeological excavations are primarily research oriented, but incorporate informal visitor and volunteer programs which vary greatly in their degree of elaboration. Usually volunteer programs are only open to people over a certain age (often sixteen or eighteen years). Magazines such as *Archaeology* and *British Archaeological News* (Council for British Archaeology, 112 Kennington Road, London, SE11 6RE) contain listings of opportunities for field experiences for non-archaeologists.

In Saskatchewan, opportunities for public involvement in excavations exist, but they are not available on a regular basis. Only 111 archaeological permits were issued in 1998, and most of these were for assessments of small development impacts. Only a small percentage (about 5-10%) of the archaeological projects try to incorporate a public program. Often these programs are geared to a specific audience, such as members of Archaeological Societies or university fieldschools. Those that are geared to a wider audience are generally advertised in local newspapers, museums, School Boards, and the *Saskatchewan Archaeological Society Newsletter* (see Chapter 8). The Saskatchewan Archaeological Society Office (664-4124) has an informal Volunteer Registry in an attempt to coordinate volunteer opportunities in the province.

## FURTHER READING

More detailed information about public involvement in archaeology can be obtained by reading the following material. These resources are described in more detail in Chapter 8.

Epp, Henry T. and Ian Dyck  
1983 Tracking Ancient Hunters; Prehistoric Archaeology in Saskatchewan. Regina: Saskatchewan Archaeological Society.

Archaeological Resource Management  
1991 Avocational Archaeology Field Manual. Community Support Services Branch - Heritage, Regina.

Linnamae, Urve and Tim E. H. Jones (eds.)  
1988 Out of the Past. Saskatoon: Saskatoon Archaeological Society.

Saskatchewan Archaeological Society Newsletter

## CHAPTER 10: GLOSSARY OF ARCHAEOLOGICAL TERMS

The entries below explain how terms used in archaeology and related subjects are defined for the purposes of this Handbook.

**anthropology:** the study of humans which can be divided into four specializations: *archaeology*, defined below, *cultural anthropology*, the study of living human groups, *linguistic anthropology*, the study of language in cultures, and *physical anthropology*, the study of human variation and evolution.

**anvil:** something that is used as a hard surface on which to pound. In pottery making, this term refers to the rounded stone or hardened clay form that is held on the inside of a pot while a paddle is used to hit the outside of the pot in order to shape it against the anvil. In stone tool manufacture, an anvil is a large flat stone placed upon the ground that other stones are hit against in order to break them.

**archaeology:** the study of past human activity by finding, describing and explaining the materials that people have left behind.

**artifact:** anything that has been made or changed by humans (for example, a spear point, piece of pottery, broken bison bone).

**assessment:** the testing of an archaeological site in order to determine its nature and research potential.

**atlatl:** the Aztec word for a spear thrower or throwing board (see diagram below, which is based upon an illustration in Gail Helgason's *First Albertans*, see Chapter 8).



Phyllis Lodoen

**atlatl dart:** a lightweight spear that was thrown using an atlatl.

**B.P.:** precisely, this stands for “before physics” or before 1950 when Carbon 14 dating was developed, but it is commonly translated as “before present”.

**boreal forest:** a broad belt of forest stretching across northern Europe, Asia and North America. Common trees are white and black spruce, birch, pine and fir.

**Carbon-14 (C-14) dating:** a method for determining the age of organic materials (like bone and charcoal) that relies on the natural decay of radioactive carbon-14 into carbon-12; also called **radiocarbon** dating.

**catalogue:** to identify and assign a unique number to each excavated artifact, much as books are identified in a library.

**classification system:** a means of organizing information or collections by dividing the whole into groups of items that share similar characteristics.

**conoidal:** a word used to describe a ceramic pot which is essentially cone shaped; it has a long body gradually narrowing to a rounded or pointed base.

**context:** the location of an artifact in relation to nearby materials (other features or artifacts, specific soil layer or type, etc. ) that can shed light on the human activity associated with that artifact.

**core:** the part of a rock that is left over after a craftsperson has removed one or more flakes in order to make stone tools from them.

**dating:** determining the approximate age of an artifact or site.

**absolute dating:** assigning an age in years, using a method such as C-14 dating or thermoluminescence dating.

**cross-dating:** determining approximate age in years by comparing diagnostic artifacts, such as projectile points, to similar artifacts from sites at which absolute dates were obtained.

**relative dating:** determining the age of something in comparison with something else excavated at the same site, rather than in calendar years. The most common factor used in determining a relative age is that the deeper an artifact is found, the older it is in relation to more shallow artifacts at the site.

**datum:** a fixed arbitrary point from which all measurements during the excavation are taken, so that site maps can be drawn.

**debitage:** the flakes and shatter of stone which result from knapping.

**diagnostic artifact:** an artifact style or type which is exclusively found in sites of a particular age or culture (for example, an Oxbow point or Avonlea ceramics).

**excavation** (archaeological): both the process and the result of careful digging and recording of information at a site.

**extinction:** the death of all members of a species of plant or animal.

**experimental archaeology:** a specialization in which archaeologists attempt to replicate things they observe in the archaeological record in an effort to understand the human behavior represented in that record. For example, they might attempt to make a specific artifact using the materials that would have been available in the past, they might use artifacts in a number of ways in an attempt to reproduce the wear patterns observed in ancient artifacts, or they might engage in some activity and study the patterns in artifact distributions that result.

**feature:** a structure in the ground which cannot be removed from a site without disturbing some of the components and which is the result of a human activity (for example, a fire pit or a tipi ring).

**field** (data base): the smallest unit of information in a computer data base (see also record).

**fieldwork:** the stages of research—inventory, assessment and excavation—that take place in the outdoor world, in study areas and archaeological sites as opposed to the office, laboratory, or library.

**fire-cracked rock** (fcr): a stone which has cracked or broken as a result of being heated.

**flake:** a thin piece of stone which has resulted either from two rocks being hit together (percussion flaking) or from the use of a pointed bone or antler to press a small piece off a stone tool (pressure flaking).

**grid:** a pattern of squares that divide a site up into units, as though a piece of graph paper were draped over a site.

**hammerstone:** a rounded stone, showing characteristic signs of having been pounded on the ends, which is used to hit other smaller stones during knapping.

**hearth:** an area of ash, burned artifacts, and burned earth which was once a fireplace.

**inventory:** 1) finding archaeological sites, or 2) the file of known sites in an area.

**jumping** (as in bison jumping): a method of hunting which involves luring or driving a herd of animals over a cliff and to their deaths.

**knapping**: making or altering stone tools.

**level**: the vertical units of excavation.

**arbitrary level**: one with a preset depth that is independent of what is being excavated.

**natural level**: one consistent with the natural layers in the soil—whether the layering is due to human activity or the sequence of changing environments.

**living floor**: a level uncovered during excavation that represents the ground surface at the time that people occupied a site.

**mapping**: noting the provenience of an artifact or drawing a scale diagram of the position of an artifact or feature in a unit.

**matrix**: the non-artifacts which surround the artifacts in the ground—dirt, seeds, roots, etc.

**ochre**: an iron oxide which occurs naturally and is used by people as a natural pigment in paints and dyes. It is red or yellow in colour.

**organic material**: any material that was once part of a living organism, either plant or animal.

**outcrops**: bedrock that is exposed on the ground surface; no soil has developed on top of it.

**palaeontology**: the study of fossil animals.

**palaeoenvironmental studies**: the study of sediments, plant or animal remains in order to interpret what the environment of a site was like in the past.

**palaeosol**: a dark coloured soil layer that at one time was a stable ground surface covered with vegetation. The dark colour is the result of the decay of the vegetation and other organic materials.

**petroglyph**: a form of precontact art in which pictures are engraved onto rock.

**pictograph**: a form of precontact art in which pictures are painted onto rock.

**Pleistocene Epoch**: the Ice Age, that lasted from approximately 2 million years ago until 10,500 years ago.

**plough zone:** a layer of soil that has been churned by a farmer's plough.

**pounding** (as in bison pounding): a method of hunting which involved luring or driving animals into a corral structure where they are then killed.

**projectile point:** a worked piece of stone, bone or metal used to tip a spear, dart or arrow. The arrow points are commonly known as arrowheads.

**provenience:** the location of an artifact within a specific unit and level. This may be exact measurements (for example, 12 cm from N wall, 65 cm from W wall, 13 cm below surface of unit 63N 85W) or may be within a limited area (for example, level 2, northeast quarter of unit 63N 85W).

**precontact:** before contact with Europeans

**prehistoric:** before written records were kept about an area and its people.

**precolumbian:** anything prior to European contact (usually used in relation to the Spanish Conquest in Central and Southern America).

**processing area:** this is an area, usually associated with a nearby habitation site or a kill site, in which there is evidence that animals were butchered, and the parts were treated (depending upon the needs of the people at that time): hides were cured, meat was cut and often dried, bones were broken to extract marrow and boiled to extract grease, pemmican was made.

**provenience:** the location of an artifact in three dimensional space.

**radiation:** energy emitted by radioactive or unstable chemical elements such as uranium.

**record** (data base): a single entry in a computer data base. Each record contains a number of fields of information. For example, in a database of library collections, each book would be a separate record, and each record would contain fields of information such as the title, author, publisher, and date.

**seasonality studies:** because all environments change with the season, archaeologists can study the season that people visited a site by looking at environmental clues such as the presence of egg shell (at spring sites) or lots of saskatoon berry seeds (at late summer sites).

**sherd:** a broken piece of pottery.

**site** (archaeological): a location with evidence of past human activity. There are many types of sites commonly found in Saskatchewan:

**habitation site:** one which shows evidence of people doing a variety of activities associated with day-to-day living. It may actually have the remains of dwellings.

**kill site:** one which shows evidence that animals were killed at the site.

**burial:** a site with human remains. These sites are rarely excavated in Saskatchewan.

**ceremonial site:** a site with presumed spiritual significance, such as a vision quest site, rock art site, or a medicine wheel.

**sterile:** without evidence of human activity.

**stratified:** having more than one stratigraphic layers.

**stratigraphy:** the study of the layers in sediment deposits; these layers or strata are laid down by natural sources (e.g. floods, mud slides, vegetation) or cultural sources (human activity). The thickness of particular strata had no direct relationship to age, since very large deposits can result from a single event.

**superposition (the law of):** a law which states that geological strata are deposited layer upon layer, and that therefore the deep strata are older than the more shallow strata.

**survey (archaeological):** the systematic search for archaeological sites.

**temper:** crushed material or sand that is added to clay in the process of making pottery. The temper adds strength to the resulting pot.

**thermoluminescence:** a method of absolute dating that determines the age of pottery, or other materials which have been heated to high temperatures.

**transitional forests:** the forest area lying between the tundra in the north and the boreal forest in the south.

**trowel:** a digging tool used by archaeologists which has a wooden handle and a diamond-shaped blade. This is the same kind of tool that bricklayers call a "pointing trowel".

**uniformitarianism (law of):** a general assumption that the forces acting in the world today (e.g. gravity, erosion, human behavior) are basically the same ones that have acted throughout Earth's history.

**unit:** a square excavation area, usually 1 x 1 m or 2 x 2 m in size.