

Traditional Learning Through Archaeology

Teaching Guide

An Edukit for the Behavioural Health Foundation

Developed by
Wind River Reserach Services
2007

Dedication

To the students of the Behavioural Health Foundation in 2003 who inspired the development of the exhibit and edukit and to all of the 600+ individuals who participated and supported the Selikirk Healing Site Project.

Cover Photo

Courtesy Historic Resources Branch,
Manitoba Culture, Heritage and Sport

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The replicas were made by Colleen Ames, Gary Wowchuck, Jim Ward, Chris Whaley and Kakwa.

Introduction

In 2003 and 2004, students from the Behavioural Health Foundation participated in a public archaeology project at the Healing Site, located on the property of the Behavioural Health Foundation at the Selkirk Healing Centre. The students assisted in recovering artifacts by excavating with trowels, screening soil through 1/4' mesh and mapping what they found onto graph paper with symbols. They worked with each other and the general public who were all guided by a member of the archaeological crew.

Over 22,000 artifacts were recovered from twelve-one metre² excavation units and 48 shovel test units during the two-year project. The public archaeology program involved 177 people volunteering for at least one day. The 2004 school program ran for four weeks with seventeen schools or 398 students and 47 teachers and assistants. Students from the Behavioural Health Foundation participated during both years. A special program was developed for the Healing Hands Daycare children in order to have them participate. Between 2005 and 2007, researchers, volunteers and staff have worked on the analysis, report, exhibit and edukit. In total, there have been over 600 people who have contributed to the project.

The exhibit and educational package (edukit) were developed for the students of the Behavioural Health Foundation as a result of the excavations that were carried out at the Healing Site. It is hoped that students, staff and visitors to the centre will learn about archaeology and the rich heritage left behind by past generations of people who lived and traveled along the Red River.

Purpose of the Edukit

The focus of the edukit is on learning about the life ways of First Nation people who lived in the Red River valley. This will be achieved through a series of hands-on activities stemming from the public archaeology project at the Selkirk Healing Centre. The Teaching Guide provides suggestions for activities that touch on a variety of subject areas and themes. Some of the edukit activities involve personal development skills such as working independently, as well as working within a group.

There are three components to the edukit: (1) exhibit case; (2) tactile learning; and (3) computer.

Exhibit Case

The exhibit case consists of a diorama and four pull-out drawers. The exhibit can be used for general viewing. As well, students can be encouraged to interact with the objects in the exhibit through a series of questions.

Tactile Learning

The purpose of the tactile learning component is to provide a variety of activities for engaging students in hands-on learning about traditional life ways. The tactile learning

component has nine sections:

- Air photos and maps;
- Ceramic technology;
- Stone tool technology;
- Bow drill and fire drill;
- Atlatl;
- Animal, bird and fish bone;
- Traditional sewing;
- Plants; and
- Traditional games.

Each section is packaged individually in labeled containers. The containers include objects mounted in ethafoam, laminated illustrations, instruction and information sheets. Copies of these are included in the Teaching Guide.

Computer

The Manitoba Archaeological Society (MAS) has a website hosted under the Canadian Archaeological Association (CAA). The MAS website includes a blog from the Healing site excavations. The blog was a daily report on finds at the site during the archaeological excavations in July 2004. The website illustrates the steps for archaeological field and lab work by telling the story of the archaeology project at the Selkirk Healing Site.

Curriculum

The goal of the edukit was to create a fun and interactive learning opportunity for students through archaeology. A variety of themes were developed that cover various subject areas. These include science and technology, math, geography, geology, biology, social studies, art, history and physical activity. Components of the edukit correspond to learning themes outlined by the Manitoba First Nations Education Resource Centre (MFNERC). These themes include: objects and materials, soils and environment, habitat, communities and diversity of living things (W. Buck, pers. comm. 2006). This edukit was designed for students at different learning levels and can be adapted to different grades.

Deduction and observation skills are required when using the edukit. These are skills archaeologists use to classify and analyze material culture. Archaeologists study how things were made, where things came from, the vast areas people traveled and traded and how people adapted to and used the environment. However, archaeological evidence is only part of the story of the past. Information is also gained through written records, maps, air photos, paintings and illustrations in the historic literature, oral tradition and stories told by Elders. Often detailed information on technology and what everyday life was like are neither recorded nor part of the oral tradition. Studying the material culture recovered through archaeology helps to fill in some of these details and enables us to better understand how people lived. Students can take pride in the technological innovation and rich cultural heritage by studying the artifacts recovered from the archaeological project.

Teaching Guide

The Teaching Guide is meant to provide background information for the exhibit and edukit. It is divided into parts that include the exhibit and nine tactile learning sections. Information in each section includes:

- Subject areas;
- Suggested activities;
- List of materials;
- Copies of the laminated instruction sheets, information sheets and illustrations; and
- Answer key.

The Teaching Guide also has a glossary of archaeological terms, a list of the references cited, an inventory of the objects in the tactile learning component and a copy of the kids booklet "*Archaeology for Kids*" that was developed specifically for the school program at the Healing Site in 2004.

Exhibit Case

The exhibit case is a moveable cabinet with a diorama and four pull-out drawers. The diorama is a reconstructed campsite scene along the Red River based on archaeological investigations at the Healing Site in 2003 and 2004. The Healing Site is located in the field north of the old stone building and classroom building of the Selkirk Healing Centre. The artifacts in the exhibit case are a combination of replicas and artifacts from the archaeological excavations at the site.

The exhibit case can be used to interact with students on a variety of themes to learn about life in the Red River valley hundreds of years ago. The artifacts and features that were recovered from the archaeological excavation tell a story about the people who camped along the banks of the river. Archaeologists are like investigators of the past. They put pieces of information together to determine what life was like long ago.

Some examples of the types of information we can learn from the artifacts at the Healing Site include:

- **Bone and seeds** for information about the environment; the season of the year; the types of animals people were hunting, fishing or trapping and the types of plants people were harvesting. Bone and wood charcoal can be used to date how old the site is. The Healing Site was occupied at least three times over the last 1200 years based on bone samples submitted for AMS or radiocarbon dating.
- **Bone and stone tools** for information on how people were hunting, processing hides and the types of utensils they once used. These help us to understand the types of day-to-day activities that were occurring at this camp.
- **Ceramics** for information about the woman and their family groups based on the design, shape and decoration of the ceramic containers. The decorative patterns they used on the containers reflect different time periods, cultural groups, and possibly specific uses for medicinal or special purposes.
- **Residue** or "pot scum" on the surface of the ceramic sherds for information on what people were cooking and eating. One of the sherds from the Healing site had maize residue, indicating maize was part of the diet.
- **Exotic stone raw material** for information about relationships with other groups of people and trade networks.

Diorama

The diorama is in the top glassed area of the exhibit case. This reconstruction represents a fall campsite scene based on the archaeological evidence at the Healing Site. There are also remains from an older campsite represented by a thin lens of artifacts between two soil layers. This is located in the front right hand corner of the diorama. Not all of the objects in the exhibit were actually collected at the site. Some organic materials do not preserve over time, therefore, things like wooden handles and bind-

ings for hafting stone tools, are no longer present. Replicas have been used to augment the archaeological recoveries.

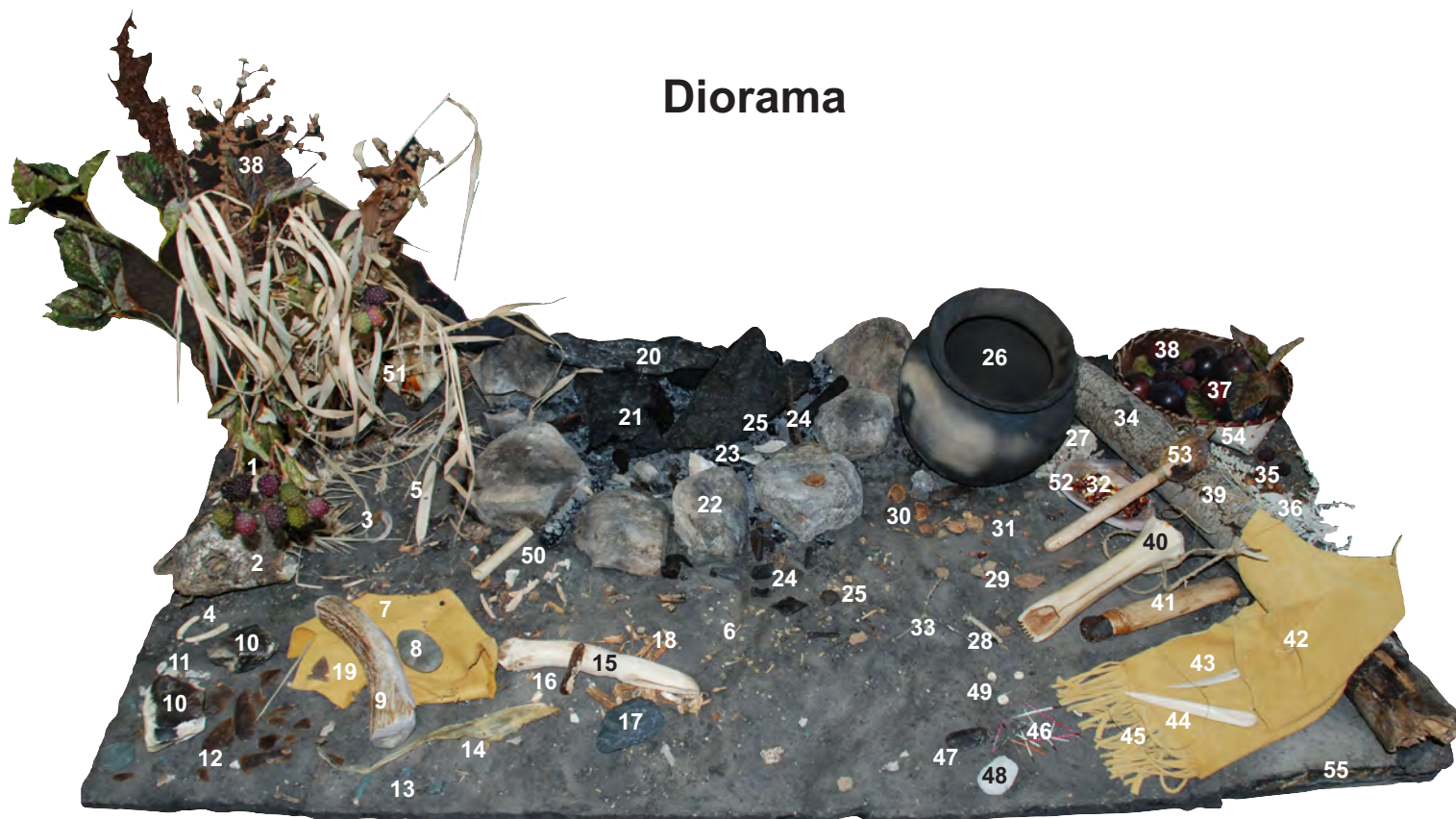
The themes presented in the diorama, include:

- **Hearth:** Components of the hearth include fire-cracked rock, charcoal, ash, burned and calcined bone and burnt plum pits. Hearths were used for many purposes, such as for warmth, cooking, smoking meat, making medicines and smudges to keep the bugs away.
- **Cooking and diet:** Beside the hearth is a ceramic pot. Ceramics were used for cooking. Evidence of food in the diorama includes chokecherry and maize seeds, plum pits and raspberry and plum fruit. A clam shell from the Red River serves as a dish and holds maize seeds. Clam shell was also used to make a spoon. Clams along with fish, birds and animals were part of the diet and are represented in the diorama by bone, scales and shell.
- **Ceramic manufacture:** Around the ceramic pot are clumps of clay, temper, a hawthorn branch and a cord-wrapped hawthorn spine. Women would have made the ceramics.
- **Fishing:** Large amounts of fish bone and scales were present around the hearths. Part of an intact fish skeleton was excavated. A possible partially made harpoon from a large mammal bone was discarded at the site and dated to over 500 years ago. Postholes around one of the hearths may represent evidence of a drying rack for fish. Fish species identified at the site included perch, walleye, freshwater drum, channel catfish, goldeye or mooneye, northern pike, white or longnose sucker and lake sturgeon.
- **Hunting and trapping:** A variety of animal and bird bone as well as projectile points from hunting weapons were excavated at the site. Some of the bones had cut marks on them indicating animals were being butchered. The bone was identified showing a wide range of animals were processed at the site for hides, furs and food. These included moose; bison; dog, coyote or wolf; red fox; black bear, river otter; American marten; least weasel; hare or rabbit; beaver; muskrat; squirrel and vole. Birds included pelican, cormorant, wood pecker and species from the Eagle or Hawk Family as well as the Pigeon or Dove Family. The diorama shows evidence of these animals through scattered fragments of bone on the ground, burned bone in the hearth, beaver skull, moose hide, sinew and rawhide as well as numerous objects made from bone.
- **Hide processing and Sewing:** Tools and materials from processing, preparing and sewing hides include stone scrapers, bone needle, bone awl, hide and sinew.
- **Making stone tools:** Men, and possibly some women, made and repaired tools and weapons. A wide variety of stone was used to make tools, some locally available along the Red River and other exotic materials from places farther

away like the Rocky Mountains, Winnipeg River, Lake of the Woods, Swan River Valley, Souris gravel pits, Interlake and North Dakota. Flakes and cores, the debitage (or discarded material) from making tools, were excavated at the site. Flakes are scattered around the ground providing evidence that tools were being made and repaired. Tiny flakes indicate that the edges of the knives and points were re-sharpened. The wooden handle, with wood shavings from being carved with a sharpened stone flake, was not preserved at the site. Many of the stone tools would have originally had handles. As well, a flint knapping kit with hide, hammerstone, carving flake and antler baton are located next to the fire.

- **Plant collecting:** A birch bark basket holds raspberries and plums. Beside it are sage and wiekas, medicinal plants.
- **Environment:** Clues about the environment are provided by the plants and animals that were harvested from the area around the campsite.
- **Archaeological lens:** Artifacts in the buried lens include fish bone, mammal bone, pottery, ash, charcoal and flakes. Different time periods represented by these layers of artifacts were recovered at the site. It appears that the Healing Site represents small groups of people who camped on the west bank of the Red River near the mouth of Cooks Creek at least three times over the past 1200 years (300, 500 and 1200 years ago)

Diorama



Key for diorama:

Fishing:

1. Harpoon
2. Fish skeleton
3. Complete fish hook
4. Broken fish hook
5. Netting shuttle
6. Fish scales & vertebrae

Making Stone Tools:

7. Hide
8. Hammerstone
9. Antler hammer
10. Knife River Flint Cores
11. Chert Flakes
12. Knife River Flint Flakes
13. Rhyolite
14. Sinew for hafting
15. Wooden handle
16. Knife River Flint retouched flake
17. Biface (knife)
18. Wood shavings
19. Knife River Flint projectile point

Hearth:

20. Ash
21. Charcoal
22. Fire-cracked rock
23. Calcine bone
24. Burnt bone
25. Burned plum pit

Ceramic Manufacture:

26. Ceramic container
27. Clay & temper
28. Decorating tool
29. Ceramic sherds

Hide Processing & Sewing:

39. Rawhide strip
40. Flesher
41. Hafted scraper
42. Sewn hide
43. Bone needle
44. Bone awl
45. Sinew thread
46. Porcupine quills
47. Knife River Flint scraper
48. Chert scraper
49. Bone beads

Plants:

30. Plum pit
31. Choke cherry seeds
32. Maize (corn)
33. Hawthorn branch
34. Poplar log
35. Wiekas
36. Sage
37. Plums
38. Raspberries

Miscellaneous:

50. Bird bone whistle
51. Beaver skull
52. Clam shell dish
53. Clam shell spoon
54. Birch bark & red-osier dogwood (red willow) basket
55. Archaeological lens with fish bone & scales, flakes, ceramics, charcoal, animal bone

Pull-out Drawers

The exhibit case includes four pull-out drawers, each with a different theme.

- Drawer 1: Archaeology at the Healing Site
 - The objects and photographs in Drawer 1 are from the 2003 and 2004 excavations at the Healing Site. The purpose of this drawer is to give a brief overview of the archaeological excavation and the type of analysis that was later conducted on the artifacts. Types of analysis included: lithic, ceramic, bone, dating, flotation, charcoal and ceramic residue.



- Drawer 2: Artifacts from the Healing Site
 - The artifacts in this drawer were excavated from the Healing Site in 2003 and 2004. They include examples of ceramics, bone and stone tools as well as interesting glass and metal artifacts. A time line illustrates that the artifacts date from between 200 to 1200 years ago.



- Drawer 3: Stone Tool Technology

- The objects in Drawer 3 were made by a modern flint knapper to illustrate:
 - A flint knapping kit (or tool kit) that was used to make stone tools;
 - Steps for making a stone knife and a projectile point;
 - Materials and tools used for making an arrow; and
 - Examples of raw material that were used by the inhabitants of the Healing Site to make their stone tools.



- Drawer 4: Ceramic Technology

- The objects in Drawer 4 are a combination of artifacts and reconstructions. A traditional potter studied ceramic sherds from the Healing Site in order to replicate one of the ceramic containers. The reconstructions illustrate the different stages of making a ceramic container. Decorating tools were replicated to recreate the patterns on the surface of the container.



EXHIBIT CASE

Subject Areas:

- Biology
- Botany
- Geology
- History
- Science and Technology
- Social Studies
- Art

Materials:

- Exhibit case includes:
 - Diorama
 - Four pull-out drawers
- Information sheet:
 - Story of the Healing Site (see front of Teaching Guide)

Activities:

- Tell or write a story about the scene reconstructed in the exhibit.
- A series of questions organized by different themes have been designed to encourage students to think about different aspects of past life ways. What type of evidence is left behind for archaeologists to piece together a story about the past? How can oral tradition and stories from the Elders be incorporated into understanding this? How do the artifacts and features recovered by archaeologists help teach about everyday life from the past? How have cultures adapted and changed over time?

Interactive Questions:

Some examples of questions to ask students are listed with the answers below.

- What is the importance of archaeologists working together with Communities and Elders?
 - Archaeology provides part of the story.
 - Elders have stories that can explain aspects of culture that cannot be excavated or learned purely from the objects recovered.
 - Artifacts can be used by the Elders to enhance and sometimes validate some of the stories passed down through the generations.
- Can you identify things in the exhibit that would not preserve over time?
 - Organic material including plants such as sage, fleshy fruits (raspberries and plums, only the seeds and pits would be preserved), birch bark, hide, sinew, rawhide, wood handle, porcupine quills.
- What season of the year do you think this reconstructed campsite represents?
 - Late summer to early fall due to the presence of plums, raspberries and dried plants.

- What kinds of activities can you see in the diorama?
 - Hunting
 - Fishing
 - Making stone tools
 - Scraping and sewing hides
 - Cooking food
 - Collecting plants

- How many types of manufacturing materials or raw materials can you find?
 - Wood charcoal
 - Unburned bone
 - Hide
 - Sinew
 - Sinew thread
 - Rawhide strip
 - Antler
 - Clay and crushed granite for ceramics
 - Stone material including Knife River Flint, chert and rhyolite
 - Beaver teeth
 - Bone
 - Wood
 - Wood shavings from carving
 - Porcupine quills
 - Plants

- Can you list all of the food types in the exhibit?
 - Raspberries
 - Chokecherries
 - Plums
 - Maize (corn)
 - Fish
 - Beaver
 - Animal
 - Bird
 - Clam
 - Porcupine

- Can you identify the replica objects in the diorama that are also in the drawers?
 - Whistle
 - Scrapers
 - Projectile point
 - Cord-wrapped hawthorn decorating tool

- What evidence of animals is there in the reconstructed campsite?
 - Burned bone in and around hearth
 - Fish skeleton
 - Beaver skull
 - Unburned animal bone fragments
 - Bird bone
 - Clam shell
 - Fish scales and vertebra
 - Porcupine quills
 - Antler

- Can you find all of the objects made from bone?
 - Beads
 - Awl
 - Needle
 - Harpoon
 - Fish haooks
 - Flesher
 - Netting Shuttle

- What evidence can you find of hide preparation and sewing?
 - Beads
 - Porcupine quills
 - Hide scraper
 - Unhafted scrapers
 - Needle
 - Awl
 - Netting shuttle
 - Sinew thread

- What objects represent stone tool manufacture?
 - Flint knapping kit:
 - Hide
 - Hammerstone
 - Antler hammer
 - Wooden handle with wood shavings and retouched flake for carving
 - Flakes
 - Cores
 - Sinew for hafting

- Can you find all of the stone tools?
 - Projectile point
 - Knife or biface
 - Scrapers
 - Retouched flakes
 - Hammerstone

- What evidence of fishing do you see?
 - Fish skeleton
 - Broken fish hook
 - Complete fish hook
 - Harpoon
 - Netting shuttle
 - Clam
 - Fish scales
 - Fish vertebrae

- What evidence of ceramic manufacture is in the exhibit?
 - Clay and temper
 - Decorating tool
 - Broken sherds

- Can you list all the utensils or tools in the exhibit?
 - Spoon
 - Basket
 - Ceramic pot
 - Clam shell dish
 - Needle
 - Netting needle
 - Awl
 - Stone scrapers
 - Flesher
 - Unhafted stone scrapers
 - Knife handle with knife
 - Retouched flake
 - Whistle
 - Fish hooks
 - Antler hammer
 - Hammerstone
 - Projectile point
 - Harpoon
 - Hide pad

- What personal items can you find?
 - Whistle
 - Beads
 - Sewing kit
 - Flint knapping kit
 - Spoon
 - Ceramic pot
 - Knife

- How many types of plants are represented in the exhibit?
 - Fruits:
 - Raspberries
 - Plums
 - Seeds:
 - Plum pits
 - Chokecherry seeds
 - Maize (corn)
 - Wood:
 - Birch bark
 - Charcoal
 - Poplar log
 - Plants:
 - Wiekas
 - Red willow
 - Hawthorn
 - Raspberry

- What items are found in the hearth?
 - Fire-cracked rock
 - Ash
 - Burned bone
 - Calcined bone
 - Charcoal
 - Charred plum pits

- There is an archaeological lens below the ground (right front corner of the diorama). Is this older or younger than the reconstructed scene? What is in it? What is similar to the scene on top?
 - Lens lower down in the ground is deeper and older
 - All of the artifacts are also found in the scene above indicating this was also an earlier campsite
 - Fish bone and scales
 - Animal bone
 - Charcoal
 - Flakes
 - Ceramics

- What type of animal did the bone come from that was dated at 1200 years ago?
 - Bison

- How many different fish parts can you find in Drawer 1? What are they?
 - Fresh-water drum Otolith
 - Walleye dentary
 - Sturgeon skate

MAPS AND AIR PHOTOS

Subject Areas:

- Geography
- Math

Materials in Edukit

- Topographic Map
- Four air photos representing different years of the current Behavioural Health Foundation property, north of Selkirk. The years include: 1948, 1972, 1979 and 1983

Activities:

- Learn your pace to calculate distance
- Topographic map exercise
- Air photo exercise

Laminated Instruction and Information Sheets:

The laminated instruction and information sheets are included in the edukit containers.

Learn Your Pace to Calculate Distance

- Mark 100 feet on the ground using the tape measure and two pins.
- Walk the 100 feet at an even pace, counting each step.
- Record your number of steps.
- Repeat.
- Add the two numbers together.
- Divide this number by 2.
- Divide this number by 10.
- The answer = your pace for 10 feet. For example, if your answer was 5, then you take 5 paces for every 10 feet you walk.
- Record how far you can walk in one minute.
- Can you calculate how far you could walk in 30 minutes?

Topographic Map Exercise

Objective: To learn how to use a topographic map.

- Locate where you are at the Behavioural Health Foundation on the topographic map. Calculate the UTM (use the information on the right side of the map sheet for instructions).
- Calculate the distance from the south edge of the town of Selkirk to the north edge of Birds Hill Park. Use a ruler and the scale at the bottom of the map sheet.
- Where is the highest elevation on the map? Look at the brown contour lines and find the highest number. What is the contour interval?
- What is the name of the creek across from the Behavioral Health Foundation?
- What is the closest town NW of Selkirk? Which roads could you take to get there? What type of roads are they? (Clue: use the road description key at the bottom of the map for assistance.)

Air Photo Exercise

Objective: To learn how to interpret features on an air photo and calculate distance.

Find the Foundation:

- Create a scale:
 - Use a ruler to measure the width of the north wall of the old stone building on either the 1979 or the 1983 air photos.
 - Go outside and measure the width of the north wall of the stone building with the tape measure.
 - If the wall is 10 feet long and only 1 inch on the air photo, then your scale for the air photo is 1 inch = 10 feet.
- Use the air photo to measure the distance between the northwest corner of the old stone building and the foundation at the north end of the field. (Clue: this foundation is a building on the 1948 and 1972 air photos.). If the measurement is 10 inches then the distance would be 100 feet.
- Starting at the northwest corner of the old stone building, walk towards where you think this foundation should be. Use your pace calculation to keep track of the distance you have traveled. Can you find the foundation in the field?

Spot the Changes:

- What changes can you see on the four air photos between 1948 and 1983?
- Are there buildings on the earlier air photos that don't occur on the later air photos? Can you tell what these buildings were?
- What can you see on the air photos that you can't see on the ground?
- Look at the 1948 air photo. Find the white spots on the east side of the Red River, south of the church. These represent the location of houses that were lived in by the Ojibwa in the 1830s. The houses were sketched on a map that was drawn in 1838.

Information Sheet on Maps and Air Photos

Air Photos

- Air photos represent a picture of the earth from an airplane.
- Archaeologists use air photos to help locate archaeological sites. There are features on air photos that are difficult to see on the ground, but can be seen from a “birds eye view”. Some examples of these include, remnants of old foundations; locations of old rivers, lakes and beach ridges. Often, changes in the soil or vegetation colour means that there may be a disturbance under the ground cover that represents an archaeological site.
- Hints for interpreting features on an air photo:
 - Water features – black or dark coloured.
 - Bedrock and meadows – light coloured, meadows indicate dry and open land.
 - Mature trees – mottled dark areas, indicating open spaces easy to walk through.
 - Willows – mottled grey, indicates moist area with thick growth, difficult to walk through.

Reading a Topographic Map

- Topographic maps are made from air photos.
- They are an exact drawing of the ground and include both natural and man-made features. Examples of features include lakes, rivers, hills, valleys, swamps, roads and buildings.
- The top of the map is grid north.
- Location: There are three ways to find your location on a topographic map.
 - Longitude and Latitude:
 - Black and white bars along the edge of the map.
 - Recorded in degrees (^o), minutes ([']) and seconds (["]).
 - Longitude measures north-south distance from the equator.
 - Latitude measures east-west from the Prime Meridian at Greenwich, England.
 - UTM (universal transverse mercator grid):
 - Blue grid lines on the map corresponding to blue numbers along the edge of the map.
 - Runs north-south and east-west.
 - Can be used to record a location within 100 metres.
 - Section, Township and Range:
 - Represented by grey line on the map.
 - 6 x 6 mile area sub-divided into 36-1 mile squares.
 - Corresponds to longitude and latitude.
 - Black numbers on the sides of the map are range (R#) and township (TP#).
- Contour Lines:
 - Indicated by light brown lines on the map.
 - Every 5th line has a number on it that represents height above sea level.
 - The distance in height between the contour lines is called the contour interval and is recorded along the bottom of the map sheet. The contour interval varies on different topographic maps.
- Scale:
 - Scale is indicated at the bottom of map.
 - The scale represents a ratio to calculate the distance on the map to distance on the ground. For example, a map with a 1:50,000 scale means that 1cm on the map is equal to 50,000cm (or 0.5km) on the ground.

CERAMIC TECHNOLOGY

Subject Areas:

- History
- Social Studies
- Science and Technology
- Art

Materials in Edukit:

- Replica ceramic sherds based on the archaeological excavations at the Healing Site.
- Decorating tools: feather, cord-wrapped stick, paddle, rib, notched rib, cord-wrapped hawthorn spine.
- Plastercine
- Illustrations:
 - Women making pottery
 - Some examples of ceramic container shapes
 - Ceramic reconstructions

Activities:

- Replicate ceramic decorating techniques.
- Make your own decorating tool.
- Suggested discussion topics for students:
 - How many different patterns of ceramics can you find in the exhibit case?
 - What would the ceramic containers have been used for?



Ceramic sherds.

(Note: First nine sherds are rim sherd replicas from the Healing Site; last two in the bottom row are body sherds.)



Decorating Tools:

- | | |
|------------------------|---------------------------------|
| 1. Feather | 5. Cord Wrapped stick |
| 2. Carved animal rib | 6. Cord-wrapped hawthorn spines |
| 3. Animal rib | |
| 4. Cord-wrapped paddle | |

Laminated Instruction and Information Sheets:

The laminated instruction and information sheets are included in the edukit containers.

Ceramic Decorating Techniques

- Replicate ceramic decorating techniques.
 - Press the plastercine into the replica sherds to look at the decorating pattern. Look for decorations on the rim and outside surface of the sherds.
 - Match the decoration patterns with the tool. Replicate the pattern in plastercine to learn how the pattern was made.
 - Create your own decorations in the plastercine.
- Make your own decorating tool.
 - Try making your own decorating tools. Materials such as sticks and plant parts could be collected from the grounds of the Behavioural Health Foundation.
- Suggested discussion topics for students:
 - How many different patterns of ceramics can you find in the exhibit case?
 - What would the ceramic containers have been used for?
- Search the Internet to learn more about early ceramics in Manitoba.

Information Sheet on Ceramic Technology

- What do the styles of ceramics (how they were made and decorated) reflect?
 - Time periods
 - Groups of people
 - Families
 - Special events and ceremonies
 - Kinds of food preparation
- How old are ceramics in Manitoba?
 - Ceramics in Manitoba date from approximately 2500 to 200 years ago.
- Why are the ceramics in pieces?
 - Ceramic containers are rarely found intact. Usually archaeologists only find a few broken pieces called sherds. Sometimes the sherds can be glued back together. This provides information on what the original container would have looked like – it's size, shape and decoration.

Making Ceramic Containers



Courtesy Historic Resources Branch, Manitoba Culture, Heritage, Tourism and Sport

Some Examples of Ceramic Container Shapes



From Steinbring 1980



From Steinbring 1976



From Dickson 1980



From Jennings 1968



From Steinbring 1980



From Pettipas 1996

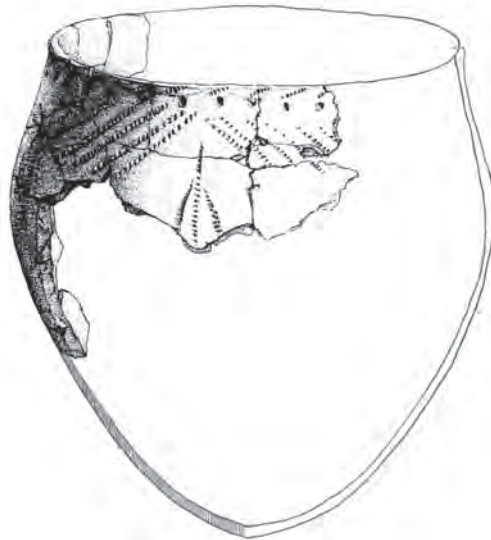
Ceramic Reconstructions



From Manitoba Culture Heritage & Recreation 1984

Archaeologists glued together pieces of ceramics found at an archaeological site in Northern Manitoba.

This style of flat container may have been used for cooking, as a plate or a lamp.



From Wiersum & Tisdale 1977

Only a few pieces of a ceramic container were found at another archaeological site. Once they were glued back together, an artist was able to show what the original size, shape and decoration would have looked like.

STONE TOOL TECHNOLOGY

Subject Areas:

- Geology
- Geography
- Social Studies
- Science and Technology
- Math

Materials in the Edukit:

- Examples of stone
- Steps on how a projectile point was made
- Types of stone tools
- Three styles of handles for hafting (attaching) tools
- Illustrations:
 - Quarry sites and geography map
 - Quarrying Stone
 - Flint knapping (making stone tools)
 - Hunting Technology: spear, atlatl, bow and arrow

Activities:

- Stone types, quarry sites and geography
- Types of stone tools
- Handles for stone tools

Stone Types, Quarry Sites and Geography

The stone that was used to make tools at the Healing Site came from a variety of quarry sites in different geographical locations.

- Match the examples of stone types to the numbers on the map.
- Note: one of the map numbers is the location of the Healing Site at the Behavioural Health Foundation north of Selkirk.
 - 1 = Obsidian from the Rocky Mountains
 - 2 = Rhyolite from the Winnipeg River
 - 3 = Jasper Taconite from the Canadian Shield (in Northwestern Ontario)
 - 4 = Knife River Flint from the Northern Plains
 - 5 = Swan River Chert from the Swan River Valley
 - 6 = Selkirk Chert from the Red River Valley
 - 7 = Agate from the Souris Valley (Souris gravel pits)
 - 8 = Porcellanite from the Souris Valley (Souris gravel pits)
 - 9 = Location of the Selkirk Healing Site at the Behavioural Health Foundation
 - 10 = Chert from the Interlake
- Use the scale on the map and a ruler to measure the distance between the Healing Site and the 9 quarry sites. Which quarry is the farthest away? Which is the closest?
- Research the geographical areas on the Internet to learn more about geography.



Lithic raw materials:

1. Rhyolite
2. Chert
3. Swan River Chert
4. Jasper Taconite
5. Knife River Flint
6. Selkirk Chert
7. Agate
8. Porcellanite
9. Obsidian

- Suggested discussion topics with the students:
 - How did people get stone from the different quarry sites?
 - Travel, trade, other?
 - Do you think some types of stone are better for making tools than others? Why?
 - Finer grained stones like obsidian and Knife River Flint were easier to flint knap than coarser material like quartzite or rhyolite.
 - Some materials have to be heated before they can be made into tools.

Types of Stone Tools

How were stone tools made? The steps in making a stone tool can be viewed using:

- Obsidian flake, blank, preform and projectile point
- Drawer 3 in the exhibit case:
 - What types of tools can you find in the exhibit case?
 - Knife or biface
 - Projectile point
 - Spokeshave
 - Flake
 - Scraper
 - Retouched Flake
 - Graver
 - What items do flint knappers use to make stone tools?
 - Antler billet
 - Antler flaker
 - Abrading stone
 - Hammerstone

Many different kinds of tools were made from stone.

- Identify what the tools were used for. Use the Fact Sheet and the Exhibit Case for clues.
 - Drill, biface, scraper, retouched flake, graver, projectile points (arrow points).
- Identify what type of stone the tools were made from by using the stone types.
 - Knife River Flint, Jasper Taconite, chert, rhyolite
- Research stone tool types on the Internet.
- Use the stone tools for math problems:
 - Measure width, length, angles on the tools
 - Calculate percentage by grouping the tools into different categories such as tool type or material type.



Stone tool types:

1. Steps for making a projectile point
2. Chert biface (knife)
3. Knife River Flint retouched flake
4. Rhyolite biface
5. Jasper Taconite biface
6. Chert biface
7. Chert scraper
8. Chert projectile point
9. Knife River Flint drill
10. Swan River Chert retouched flake
11. Chert projectile point
12. Knife River Flint graver; retouched flake
13. Knife River Flint scraper
14. Chert projectile point

Handles for Stone Tools

Many stone tools were hafted (connected) onto handles. The handles and the hide glue and sinew used to attach the tool rarely survive over time. Archaeologists find only the stone part of the tool.

Look at the three examples of handles.

- What materials were used to make these handles?
 - Antler
 - Bone
 - Wood
- Find the tool that would have been hafted in each of these handle-styles.
 - Bone handle: graver
 - Wood handle: knife or biface
 - Antler handle: scraper
- What was used to attach the handles to the tools?
 - Sinew, hide glue



Handles:

1. Wood
2. Bone
3. Antler

Laminated Instruction and Information Sheets:

The laminated instruction and information sheets are included in the edukit containers.

Stone Materials, Quarry Sites and Geography

The stone that was used to make tools at the Healing Site came from a variety of quarry sites in different geographical locations.

- Match the nine examples of stone materials to the numbers on the map.
Note: one of the map numbers is the location of the Healing Site at the Behavioural Health Foundation north of Selkirk.
- Use the scale on the map and a ruler to measure the distance between the Healing Site and the nine quarry sites. Which quarry is the farthest away? Which is the closest?
- Research the geographical locations on the Internet to learn more about geography.
- Suggested discussion topics with the students:
 - How did the stone get from the different quarries to the Healing Site?
 - Do you think some types of stone are better for making tools than others? Why?

Types of Stone Tools

How were stone tools made? The steps in making a stone tool can be learned with:

- Obsidian flake, blank, preform and projectile point
- Drawer 3 in the exhibit case:
 - What types of tools can you find in the exhibit case?
 - What items do flint knappers use to make stone tools?

Many different kinds of tools were made from stone.

- Determine what the tools were used for.
Use the Fact Sheet and the Exhibit Case for clues.
- Identify what stone material the tools were made from. Compare the tools to the examples of stone.
- Use the stone tools for math problems:
 - Measure width, length, angles on the tools.
 - Calculate percentage by grouping the tools into different categories such as tool type or material type.

Handles for Stone Tools

Many stone tools were hafted (connected) onto handles. The handles and the hide glue and sinew used to attach the tool rarely survive over time. Archaeologists usually find only the stone part of the tool.

Look at the three examples of handles.

- What are these handles made from?
- Find the tool that would have been hafted in each of these handle-styles.
- What was used to attach the handles to the tools?

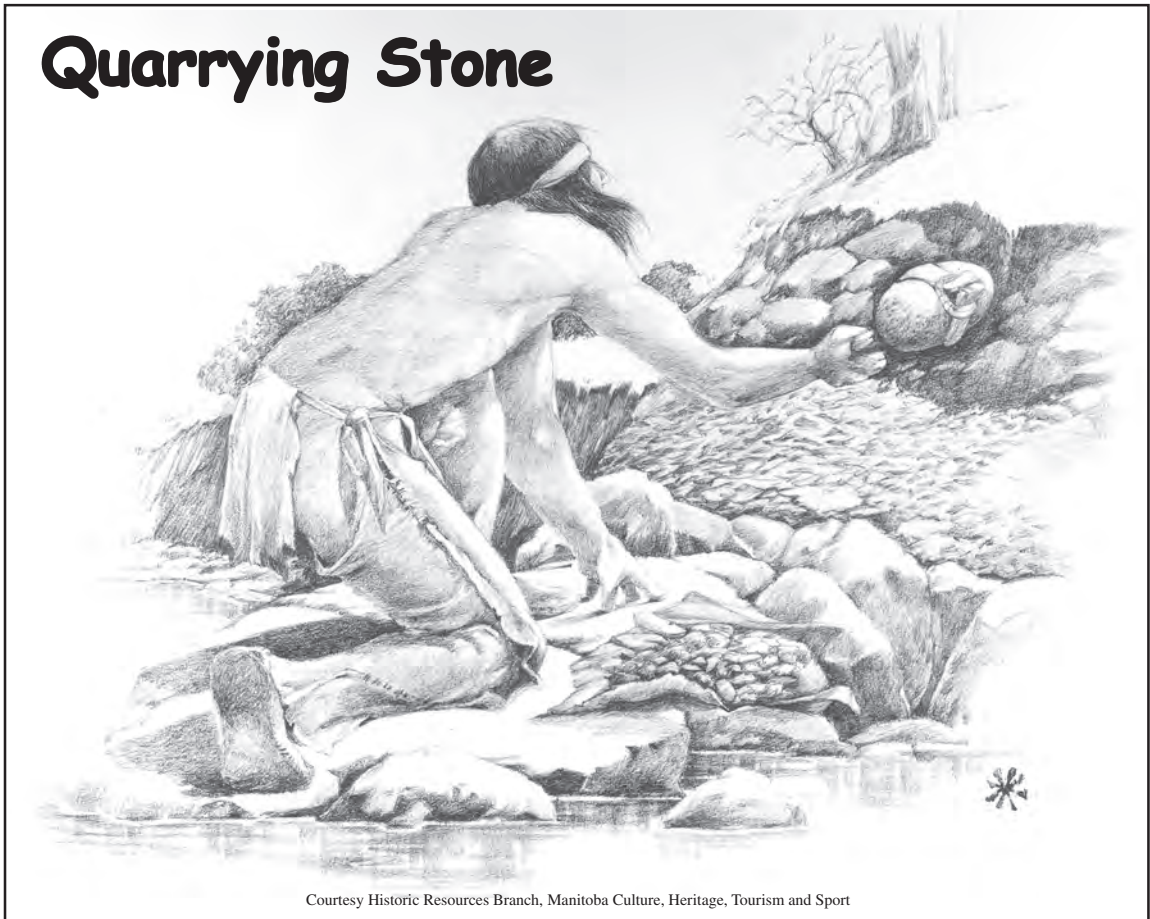
Information Sheet on Stone Tool Technology

- How old are the stone tools in Manitoba?
 - The oldest tools are 11,500 years old. These tools were left behind by people who moved into the area as the glaciers melted.

- How were stone tools made?
 - Flint knapping or flaking
 - Grinding, pecking, polishing

- What types of tools were made from stone?
 - Hunting and war:
 - Projectile points
 - Fishing:
 - Net sinker
 - Food Processing utensils:
 - Knives or bifaces
 - Retouched and utilized flakes
 - Mortar and pestle
 - Chopper
 - Mano and metate
 - Boneworking and Woodworking:
 - Axe
 - Celt
 - Adze
 - Spokeshave
 - Burin
 - Drill
 - Graver
 - Sharpening stones
 - Hammerstone
 - Stoneworking:
 - Abrader
 - Anvilstone
 - Hammerstone
 - Whetstone
 - Clothing manufacture:
 - Scraper

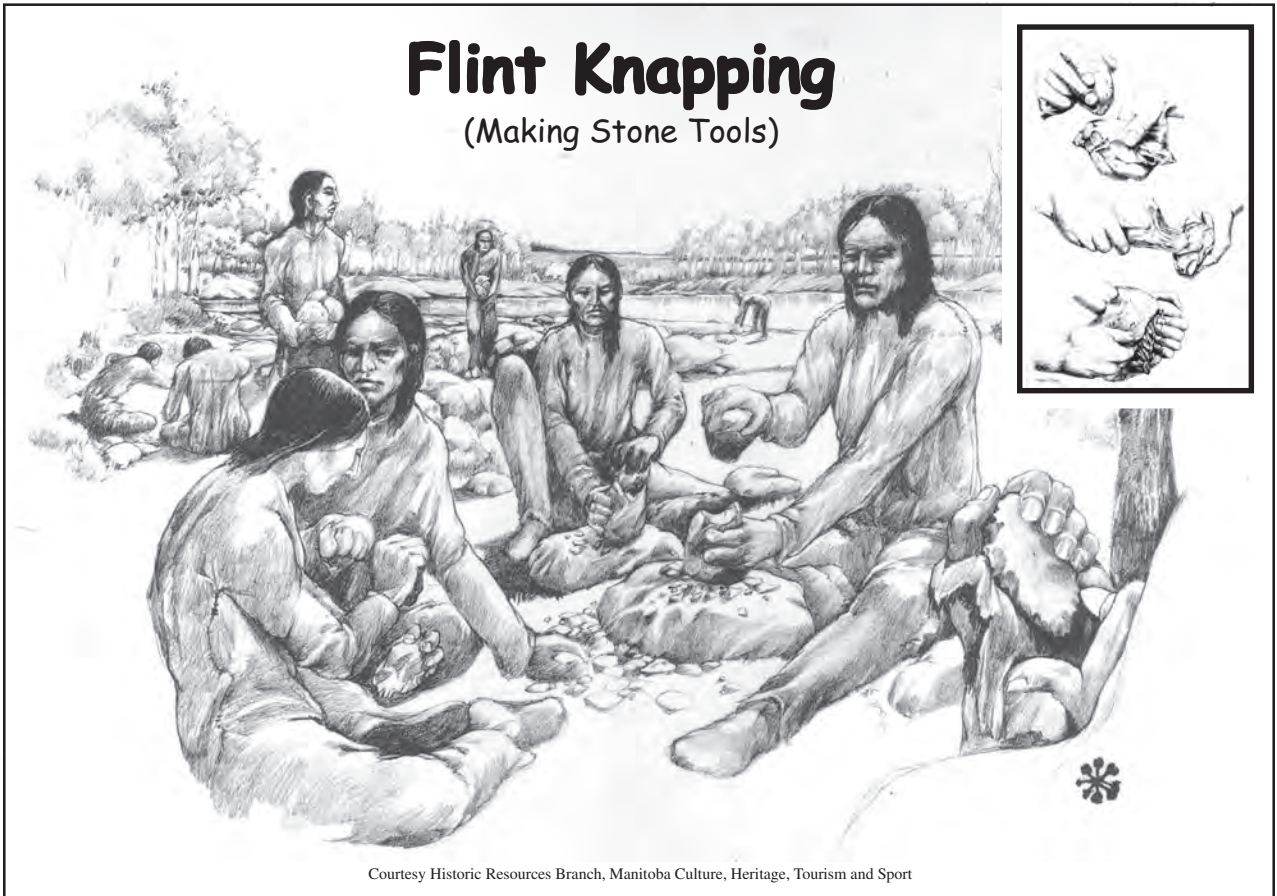
Quarrying Stone



Courtesy Historic Resources Branch, Manitoba Culture, Heritage, Tourism and Sport

Flint Knapping

(Making Stone Tools)



Courtesy Historic Resources Branch, Manitoba Culture, Heritage, Tourism and Sport

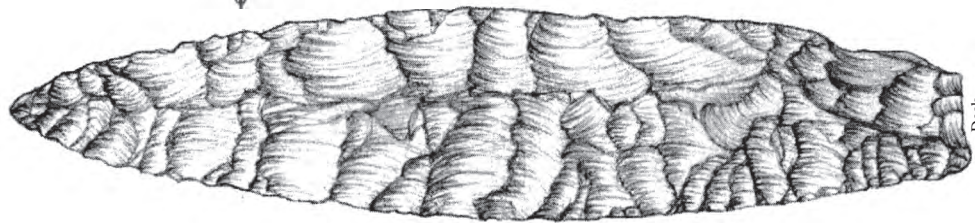
Hunting Technology

Spear

11,500 - 7,000 years ago



Courtesy Historic Resources Branch, Manitoba Culture, Heritage, Tourism and Sport



Spear Point

Agate Basin

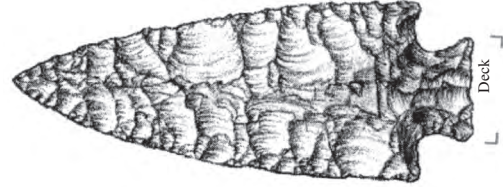
Points are actual size

Atlatl

8,500 - 2,000 years ago



From Pettipas 1996



Dart Point

Pelican Lake

Bow and Arrow

2,500 - 200 years ago



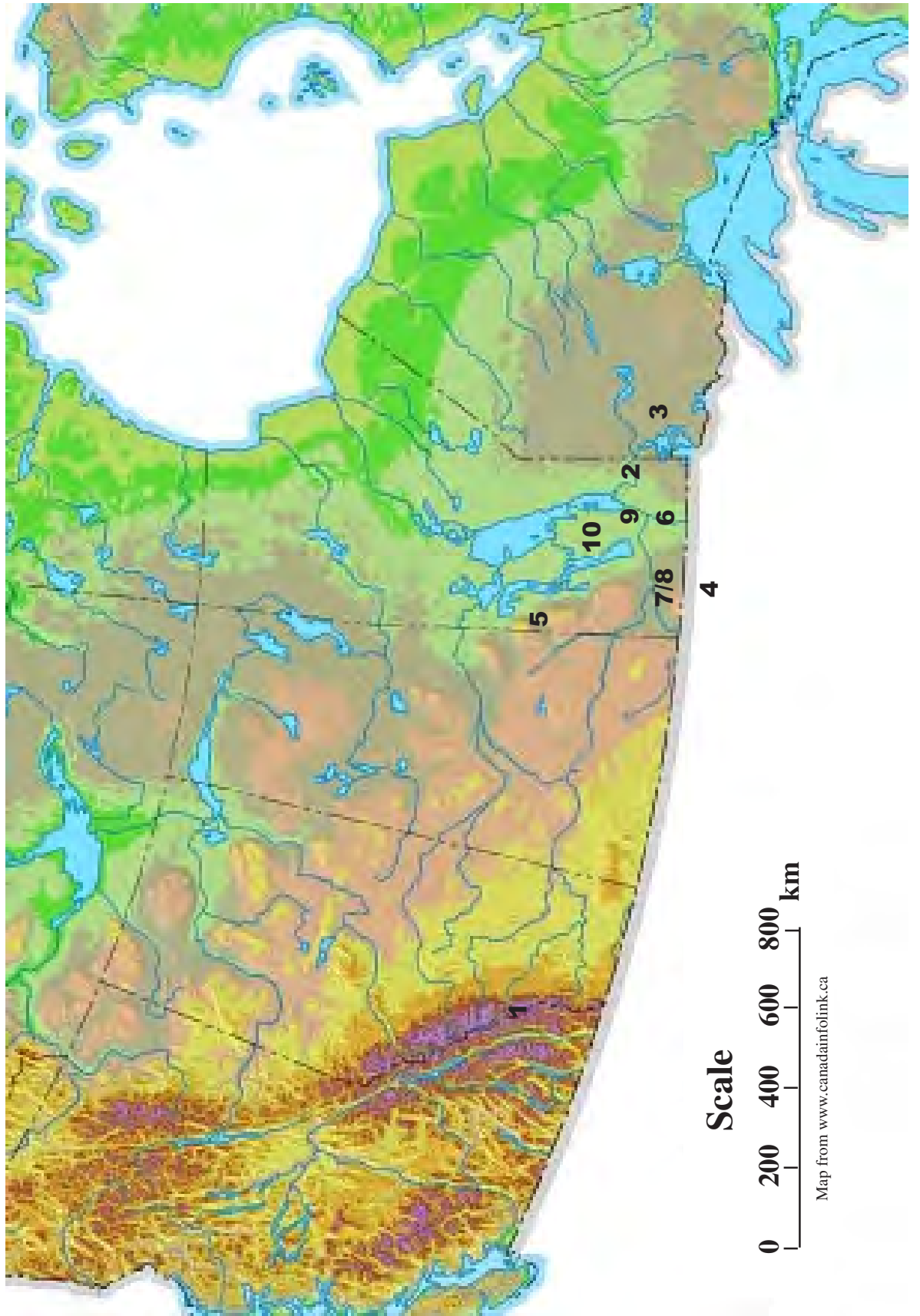
From



Arrow

Plains Side-

Quarry Sites and Geography



BOW DRILL AND FIRE DRILL

Subject Areas:

- Science and Technology
- Social Studies
- Art

Materials in Edukit:

- Bow drill: bow, three stone drills and two antler drills. The wood used for the drills includes maple and red-osier dogwood.
- Fire drill: bow, two wood spindles and hearth. Bow and spindles are made from Red-osier dogwood.
- Antler hand piece to be used with the bow drill and the fire drill.
- Materials to drill including wood, bone, shell and antler.
- Illustrations:
 - Using a bow drill with a hand piece and a mouthpiece

Activities:

- Replicate a traditional manufacturing technique.
 - Try drilling into bone, wood, antler and shell with the bow drill using the two types of drill bits.
 - Is there a difference between the drill bits?
- Try identifying the stone material used as drill bits. Use the stone material reference collection or Drawer 3 in the exhibit case for assistance.
 - Knife River Flint
 - Chert
- Exhibit case:
 - What types of objects in the exhibit case would have required the use of a bow drill?
 - Fish hooks
 - Bone beads
 - Netting shuttle
 - Needle
- Research traditional drills on the Internet.



Bow and fire drill:

- | | |
|-----------------------------------|-----------------------|
| 1. Bow | 6. Chert tipped drill |
| 2. Antler tipped drill | 7. Antler hand piece |
| 3. Antler tipped drill | 8. Spindles |
| 4. Knife River Flint tipped drill | 9. Wood hearth |
| 5. Knife River Flint tipped drill | |

Laminated Instruction and Information Sheets:

The laminated instruction and information sheets are included in the edukit containers.

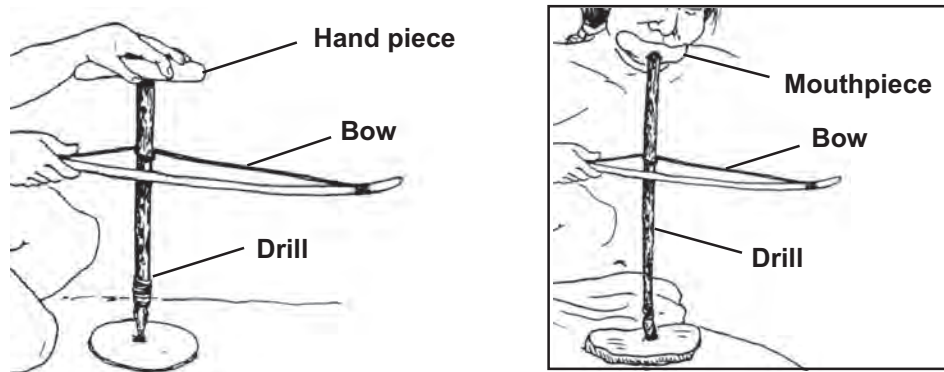
Activities for the Bow Drill

- Replicate a traditional manufacturing technique.
 - Try drilling into bone, wood, antler and shell with the bow drill using the two types of drill bits.
 - Is there a difference between the drill bits?
- Try identifying the stone material used as drill bits. Use the stone material reference collection or Drawer 3 in the exhibit case for assistance.
- Exhibit case:
 - What types of objects in the exhibit case would have required the use of a bow drill?
- Research traditional drills on the Internet.

Information Sheet on the Bow Drill

- Who used drills?
 - All First Nation groups across North America had a version of a drill. The most common type of drill is the hand drill.
 - The Inuit used the bow drill extensively. However, other groups such as the Northern Algonkian and the Dakota also used a bow drill for making things. The Dakota and Cree were reported to have used bow drills for starting fires (Martin 1934).
- What were bow drills used for?
 - Drilling holes, for example in needles, netting shuttles, fish hooks.
 - Artistic design.
- What evidence do archaeologists find of bow drills?
 - Stone drill bits.
 - Objects that have been drilled.

Bow Drill



Modified from Historic Resources Branch, Manitoba Culture, Heritage and Recreation 1994

ATLATL

Subject Areas:

- Social Studies
- History
- Physical Education

Materials in Edukit:

- Replica atlatls:
 - Throwing board or handle made from birch
 - Shaft with removable stone tipped dart
 - 2 stone tipped shaft with dart attached
 - 1 metal tipped shaft with dart attached – not a traditional style
 - Notes:
 - The replica atlatl have three different styles of projectile points: Oxbow made from chert and Hanna and Besant made from Knife River Flint.
 - The feathers on the shafts are awl and turkey.
 - Hide glue was used to fasten the feathers and projectile points on the shafts and dart as well as for the hook on the throwing board.
- Illustrations:
 - How to throw an atlatl
 - Parts of an atlatl

DO NOT GET THE ATLATL WET AS THIS WILL DETERIORATE THE HIDE GLUE.

Activities:

- Learn about a traditional hunting technique.
- Compete with other students to see who can throw the atlatl darts the farthest.
 - Measure the distance using your pace calculation (see Maps and Air Photos).
- Make a target to hit and compete to see who has the greatest accuracy.
- Research atlatls on the Internet.



Atlatl:

1. Dart and shaft with chert point
2. Knife River Flint tipped drill
3. Dart and shaft with modern metal tip
4. Shaft
5. Dart with Knife River Flint point
6. Throwing board



Close-up of dart points.

Laminated Instruction and Information Sheets:

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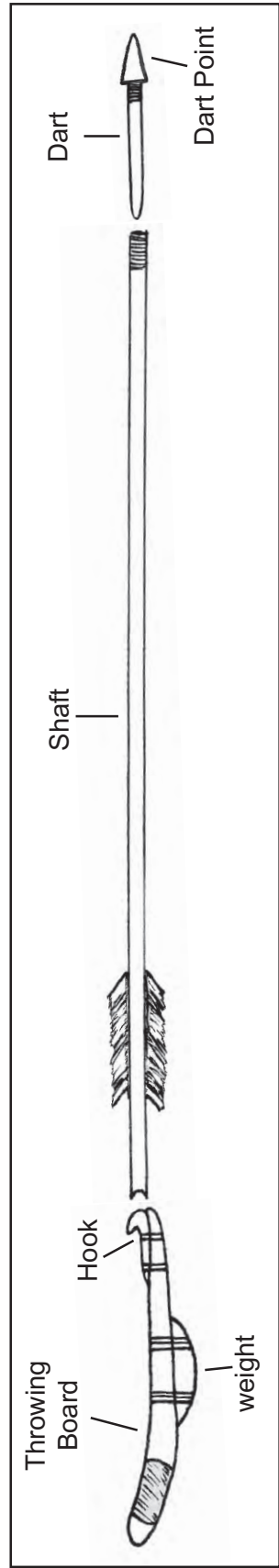
Activities for the Atlatl

- Learn about a traditional hunting technique.
- Compete with other students to see who can throw the atlatl darts the farthest.
 - Measure the distance using your pace calculation (see Maps and Air Photos).
- Make a target to hit and compete to see who has the greatest accuracy.
- Research atlatls on the Internet.

Information Sheet on the Atlatl

- What is an atlatl?
 - Spear thrower used as a weapon for hunting and war.
 - Used by First Nation people across North, Central and South America and in other parts of the world such as Europe, Australia and Africa.
- How does an atlatl work?
 - The dart is inserted into the shaft. The other end of the shaft is inserted onto the hook on the throwing board. The shaft and dart are launched from the throwing board using a motion similar to throwing a javelin.
- How old is the atlatl?
 - Atlatls in North America are about 12,000 years old. In Manitoba, they appear to have been used between approximately 8,500 and 2,000 years ago based on dart points recovered from archaeological sites.
 - Developed after the spear.
 - Replaced by the invention of the bow and arrow.
- What is the advantage of using an atlatl?
 - Atlatl allowed people to hunt at a greater distance from their prey.
 - Atlatl darts could be thrown with greater speed.
- What parts of an atlatl would an archaeologist find?
 - Archaeologists usually only find stone, bone, antler or copper dart points; weights and some times the hooks.

Parts of an Atlatl



Throwing Board

- Also known as a handle or launcher.
- Many different styles were made from a variety of materials such as antler, bone or wood.
- Handles were personalized.

Shaft

- Looks like a large arrow shaft but is 4 to 6 feet long.
- The ends are hollowed out for insertion of the hook on the throwing board at one end and the dart at the other.

Dart

- Tapered at one end for insertion into the shaft.
- Stone, bone, antler or copper dart points were hafted onto the other end with sinew and hide glue.
- A hunter would have a number of darts that were likely carried in a pouch, easily accessible so they could quickly reload their weapon.

Weight

- Made from carved bone or stone.
- Attached to the throwing board.

How to Throw the Atlatl



From Pettipas 1996

ANIMAL BONES

Subject Areas:

- Biology
- Science and Technology
- Social Studies

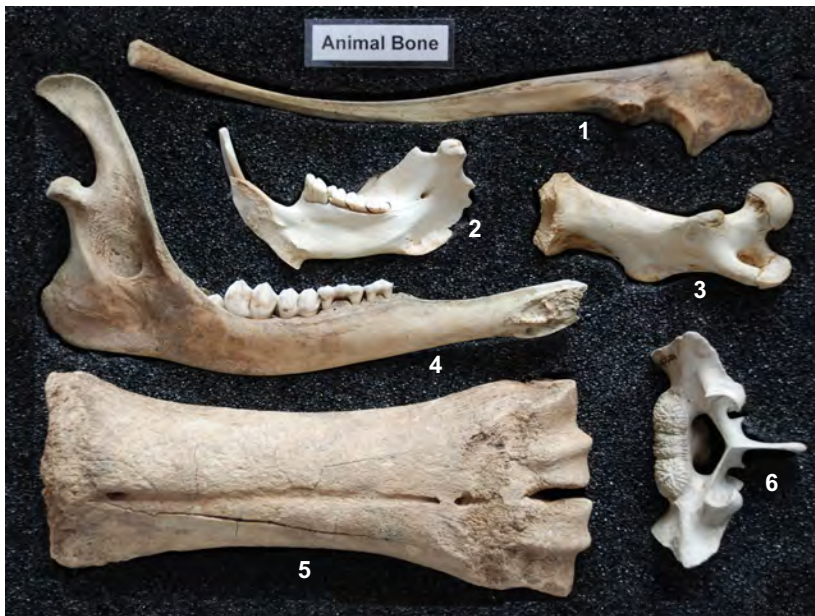
Materials in the Edukit:

- Reference bone:
 - Fish
 - Bird
 - Mammal
 - Shell
- 10 examples of bone for sorting and identification
- Illustrations:
 - Bird, fish, and animal skeletons
 - Hunting buffalo and how the buffalo was used
 - Spearing fish in a wier
 - Scraping hides and sewing
- Sewing kit: bone needle, awl, artificial sinew and hide

Activities:

- Identify the type of bone.
 - Look at the examples of bird, fish and animal bone. Compare them to the skeleton illustrations. What part of the body do you think they are from? Why?
- Sort and identify bone.
 - Sort the bone into fish, bird, mammal, shell.
 - Can you find the antler piece? What type of animal is it from?
 - Can you guess what parts of the animal the bones came from by comparing them to the skeleton illustrations and the reference bone?
 - Can you find the bone that has cut marks from butchering?
 - Animal rib bone
 - Can you find the bone that has been made into a tool? How has it been modified?
 - Polished, notched, drilled
 - Can you find the broken tool that has been polished from use?
- Replicate traditional sewing techniques.
 - Do you know what these tools do?
 - Awl for punching holes in the hide
 - Needle for sewing

- Do you know what type of animal and what part of the body they were made from?
 - Animal long bone (leg)
- Show what was involved in punching the hide and sewing together with artificial sinew.
- Exhibit case.
 - How many different types of animals can you find in the exhibit case?
 - What parts of the animal are represented?
 - Bone
 - Teeth
 - Hide
 - Sinew (tendon)
 - Antler
 - Shell
 - Fish scales
 - What types of bone tools are in the exhibit case?
 - Flesher
 - Needle
 - Awl
 - Harpoon
 - Fish hooks
 - Netting shuttle



- Animal bone:
1. Deer ulna
 2. Beaver mandible
 3. Beaver femur
 4. Deer mandible
 5. Bison metacarpal
 6. Deer vertebra



- Bird bone:
1. Pelican humerus
 2. Pelican carpometacarpus
 3. Turkey sternum
 4. Turkey humerus
 5. Turkey femur
 6. Turkey ilium
 7. Turkey vertebra



- Shell and Fish bone:
- | | |
|---------------|----------------------------|
| 1. Clam shell | 8. Basioccipital (Cranium) |
| 2. Dentary | |
| 3. Vertebra | |
| 4. Cleithrum | |
| 5. Operculum | |
| 6. Ceratohyal | |
| 7. Otolith | |



Bone for sorting:

- | | |
|-----------------------------------|----------------------------|
| 1. Bird humerus | 8. Clam |
| 2. Animal rib with cut marks | 9. Antler |
| 3. Fish fin | 10. Fish ceratohyal |
| 4. Animal phalange | 11. Bird ilium |
| 5. Animal ulna | 12. Cut bird bone |
| 6. Animal burned bone | 13. Animal maxilla (skull) |
| 7. Drilled, carved, polished bone | |



Sewing:

1. Bone awl
2. Bone needle
3. Hide
4. Artificial sinew

Laminated Instruction and Information Sheets:

The laminated instruction and information sheets are included in the edukit containers.

Animal, Bird and Fish Reference Bone

- Identify the type of bone:
 - Look at the examples of shell, bird, fish and animal bone.
 - Compare them to the skeleton illustrations of a bird, fish and buffalo.
 - What part of the body do you think they are from? Why?

General Characteristics of Animal, Bird and Fish Bone

	Animal	Bird	Fish
Weight (proportion to size)	heavy	light	light
Appearance	not semi-translucent	not semi-translucent	semi-translucent
Surface Structures	well developed and well outlined	well developed, often sharply outlined	moderately developed
Cortex (bone)	thick	thin	no central cancellous bone
Marrow Cavity (centre of the bone)	relatively small	large	absent
Bone Epiphyses (end of the bone)	distinguishable until young adult	distinguishable in some species until nearly adult	absent

From H. Savage 1981

Animal, Bird and Fish Bone

- Sort and identify bone:
 - Sort the bone into fish, bird, mammal and shell. For assistance, compare them to the reference bone and skeleton illustrations.
 - Find the antler piece. What type of animal is it from?
 - Guess what parts of the animal the bones came from by comparing them to the skeleton illustrations and the reference bone.
 - Find the bone that has cut marks from butchering.
 - Find the bone that has been made into a tool. How has it been modified?
 - Find the broken tool that has been polished from use.
- Exhibit case:
 - How many different types of animals can you find in the exhibit case?
 - What parts of the animal are represented? (for example: hide, sinew, bone, antler, shell and fish scales)?
 - What types of bone tools are in the exhibit case?
- Search the Internet to find out what else can be learned about animal, bird and fish bone from an archaeological site.

Traditional Sewing

- Replicate traditional sewing techniques.
 - Do you know how these tools were used?
 - Do you know what type of animal and what part of the body the tools were made from?
 - Try using the awl and needle to sew the hide with artificial sinew.

Information Sheet on Animal, Bird and Fish Bones

- What do archaeologists learn from bones?
 - Type of animal
 - Type of bone, for example, skull, leg
 - Sex – male or female
 - Age – fetal, adolescent, adult
 - Dating – AMS or radiocarbon dating

- Animals were used for more than just food. What other information can be learned from animal bone collected at an archaeological site?
 - Season of the year
 - How the bone was used, for example, if it was broken for marrow extraction, modified into tools, made into beads and pendants
 - Type of diet people had
 - Butchering patterns

- How can you tell if the bones represent food?
 - Butchering marks or cut marks
 - Burned
 - The context or where it was found, for example, if it was collected from a hearth, storage pit or mixed in with other artifacts.

Hunting Buffalo

Buffalo bones from an archaeological site...

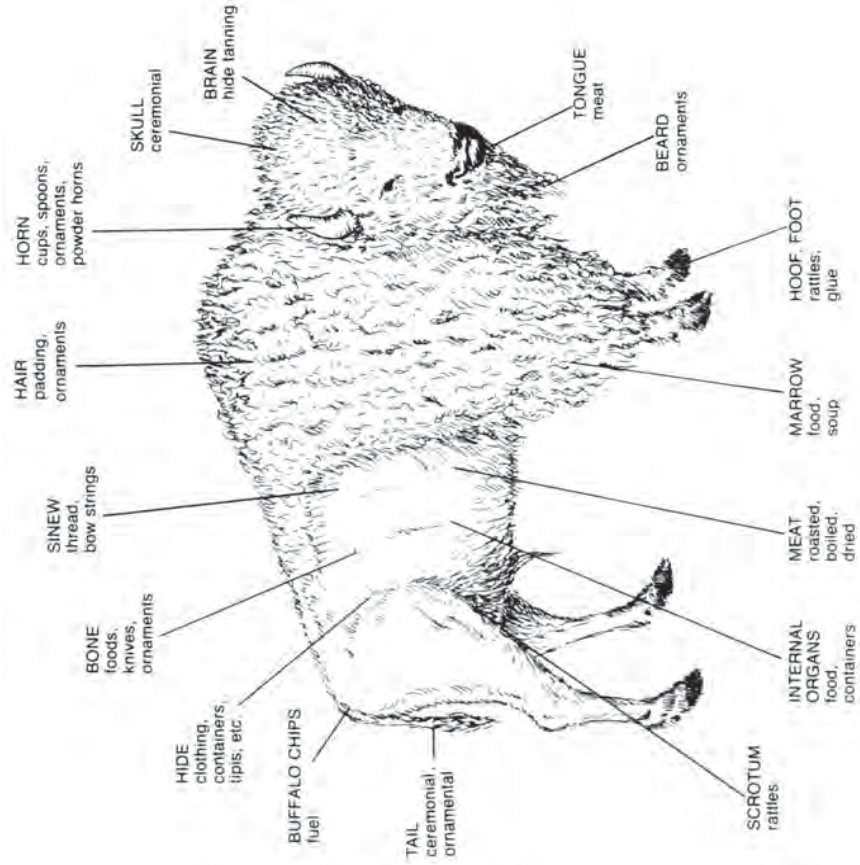


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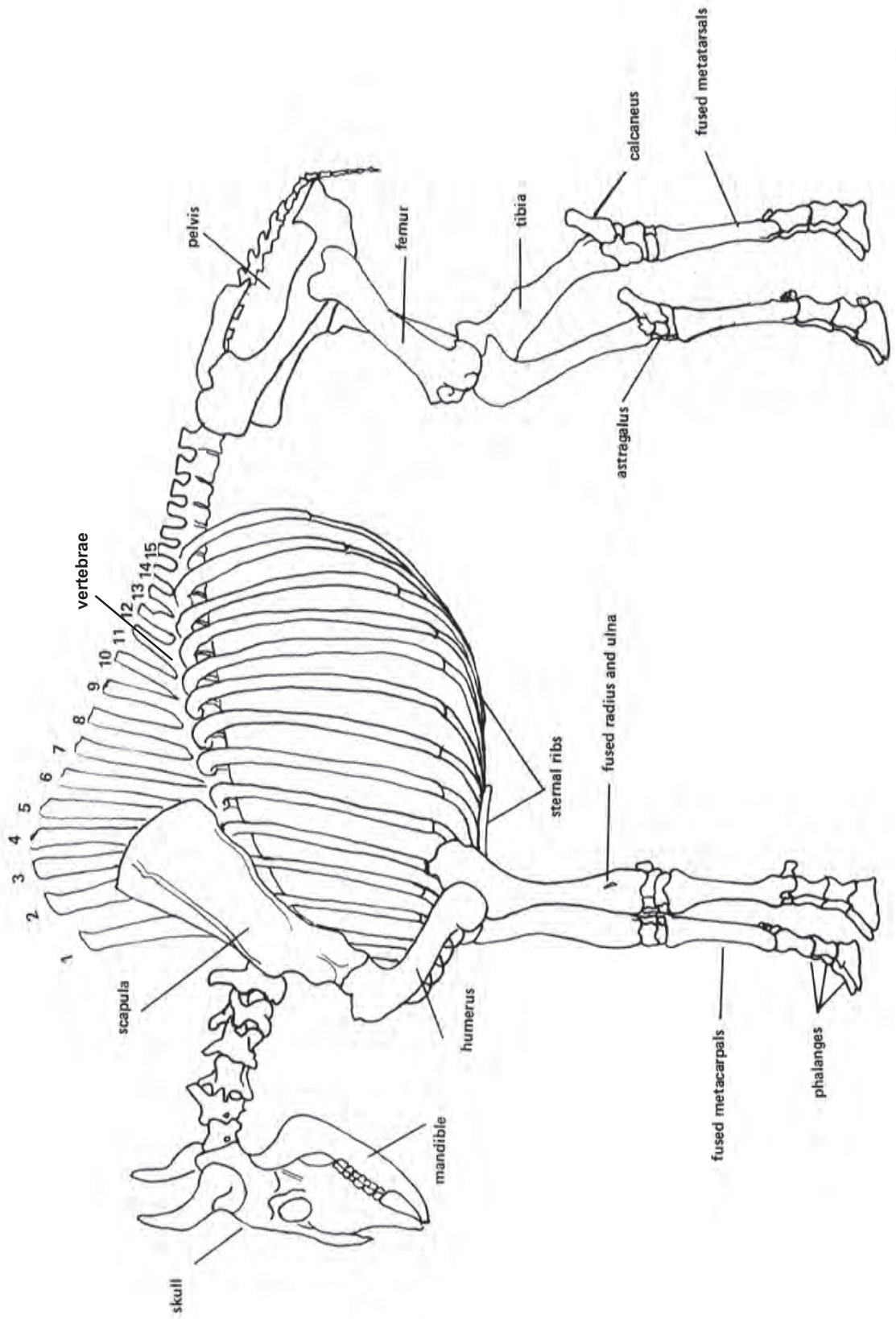
...were from hunters driving Buffalo over a cliff.

How the Buffalo was Used

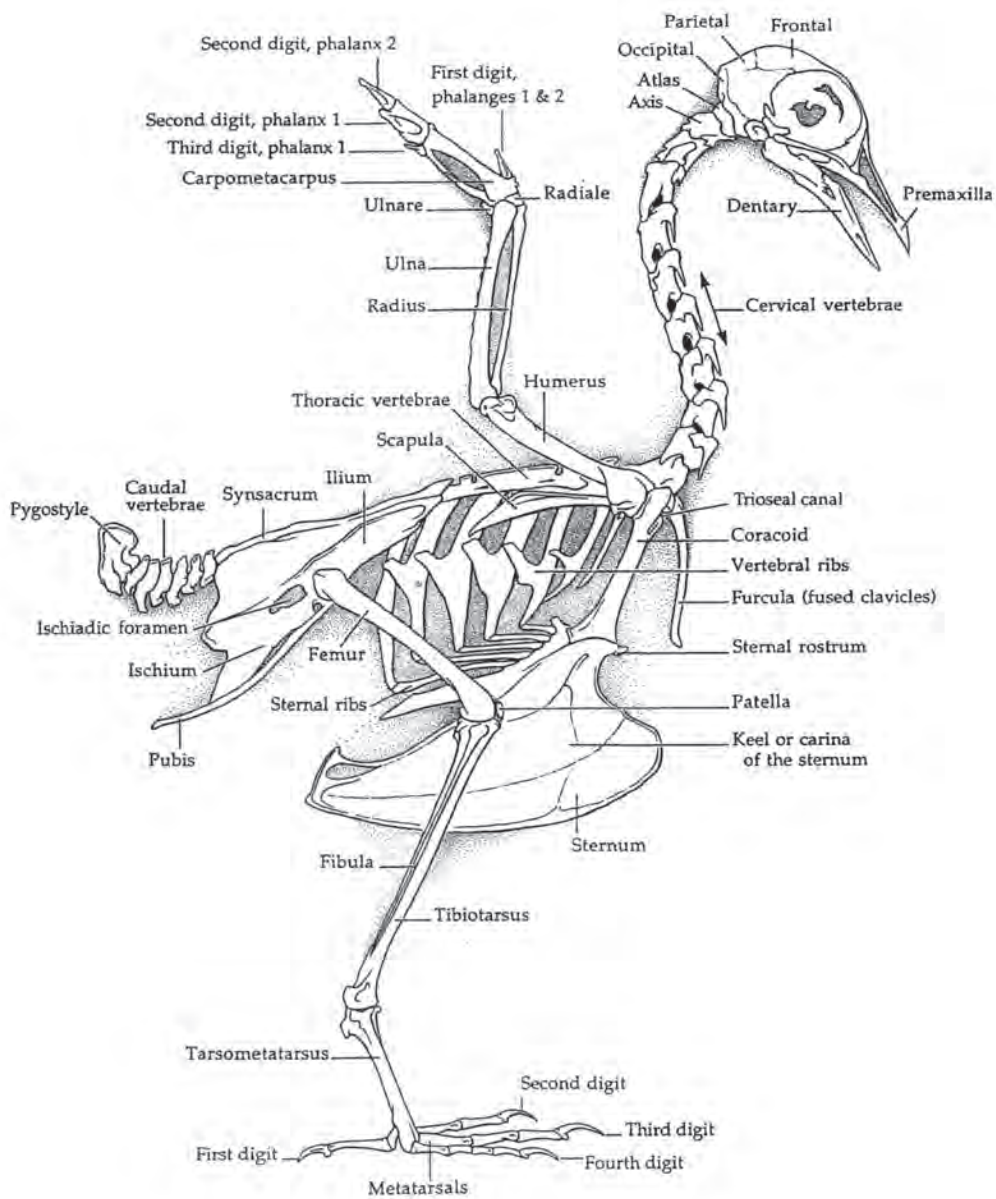


From Putt 1991

Buffalo Skeleton

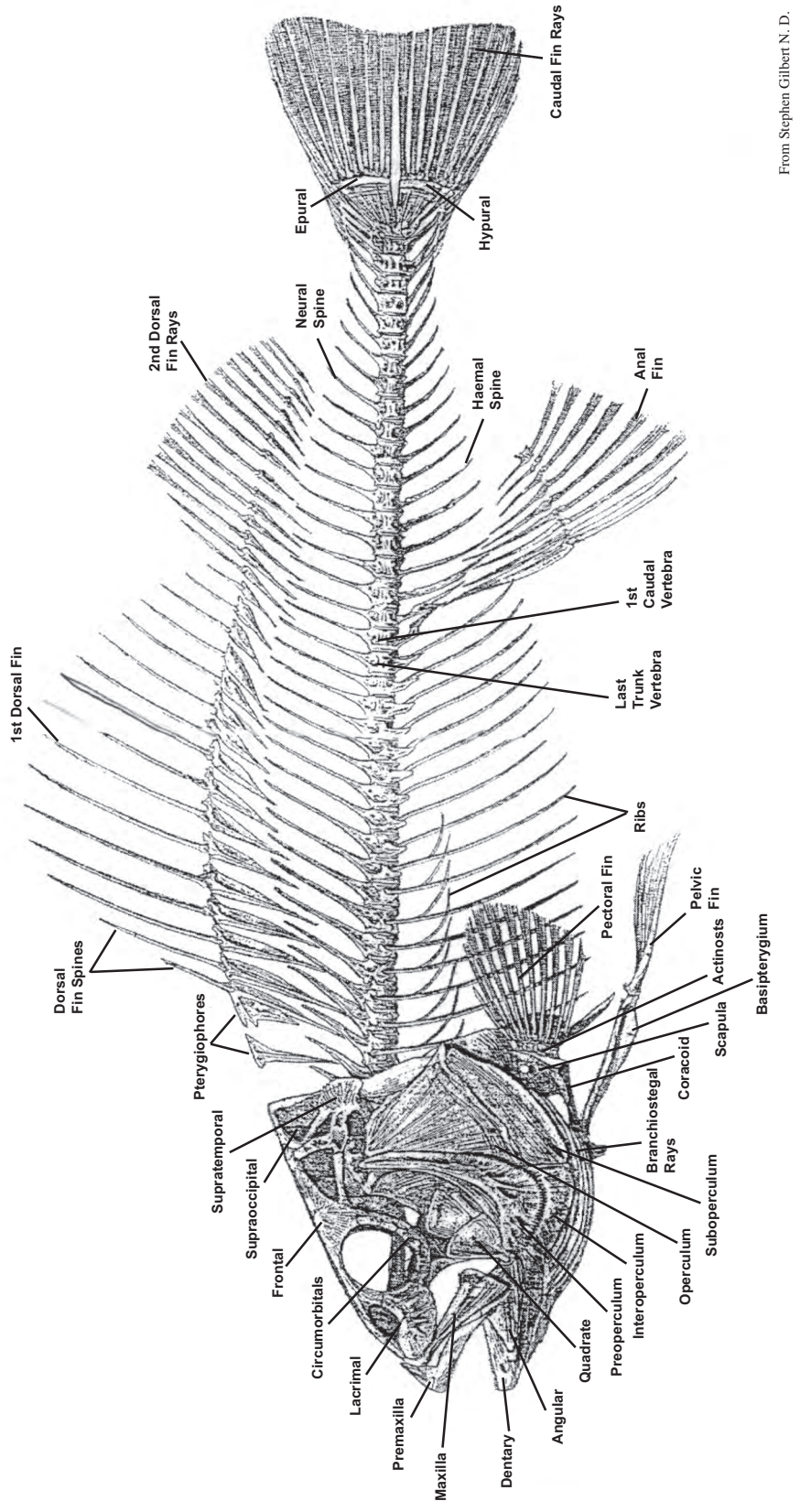


Bird Skeleton



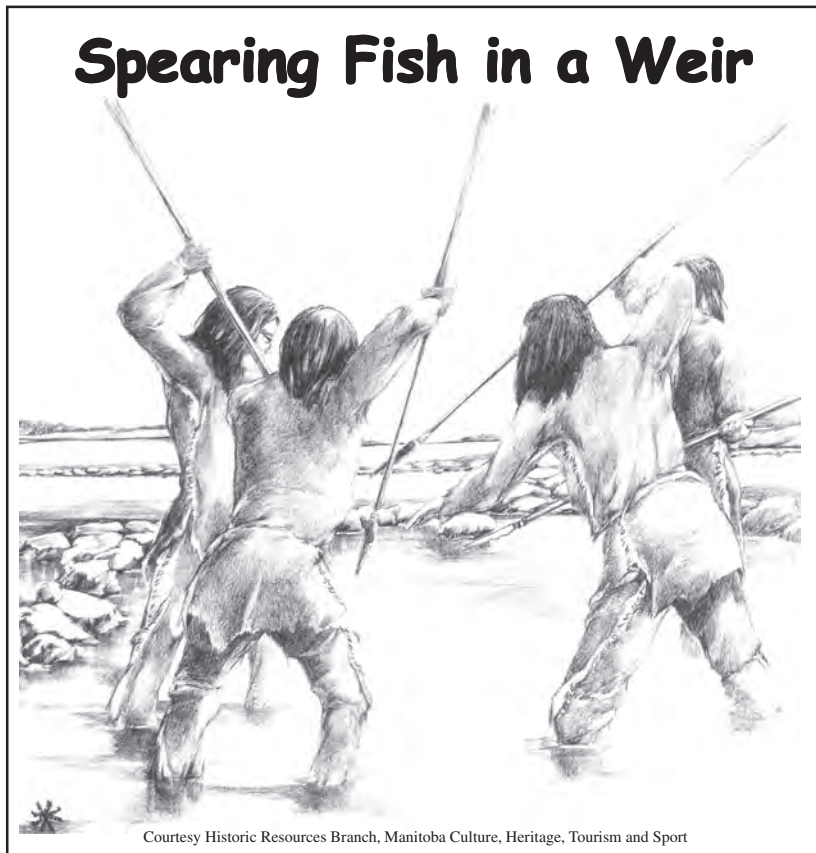
From Proctor and Lynch 1993

Fish Skeleton



From Stephen Gilbert N. D.

Spearing Fish in a Weir



Courtesy Historic Resources Branch, Manitoba Culture, Heritage, Tourism and Sport

Scraping Hides & Sewing



Courtesy Historic Resources Branch, Manitoba Culture, Heritage, Tourism and Sport

PLANTS

Subject Areas:

- Science
- Biology
- Botany
- History
- Math
- Social Studies

Materials in the Edukit:

- Pressed plants (called voucher specimens) collected from the property of the Behavioural Health Foundation, north of Selkirk.
- Bag of six different types of seeds.
- Plant chart.

Activities:

- Plant identification.
- Traditional Uses of Plants.
- Archaeological Evidence of Plants.

Laminated Instruction and Information Sheets:

The laminated instruction and information sheets are included in the edukit containers.

Plant Identification

All of the pressed plants grow on the property of the Behavioral Health Foundation north of Selkirk. They were collected in 2005 along the north end of the property near where the archaeological excavation occurred.

- Look at the pressed plants.
 - How many different types are there?
 - Try grouping the plants into different categories. For example, by leaf shape or by Family name. How else can they be grouped?
 - Which plants were flowering when they were collected?
 - Which plants were fruiting when they were collected?

- Can you find examples of these types of pressed plants growing on the Behavioural Health Foundation grounds?
 - What type of habitat did you find the plants in? For example, clearing (field), edge of wooded area, in the wooded area, along the river, along the marshy (wet) area.
 - Are there differences in the plants you found because of the time of the year? For instance, is the plant fruiting or flowering?

Traditional Uses of Plants

- Pick a pressed plant to learn about traditional uses of plants.
 - What part of the plant was used traditionally?
 - How was it used?
 - What season of the year would the plant have been collected for use?
 - Use the plant chart to find some of the answers.
 - Search on the Internet for additional information.
- Collect stories from Community members and Elders about different types of plants and how they were/are used.

Archaeological Evidence of Plants

Seeds

- Provide each student or group with a sample of seeds from the Seed Bag.
- Sort the seed samples into types.
- What kinds of plants do you think the seeds are from?
- Describe the shape, colour and size of each type of seed.
- Count the number of seeds. Calculate the percentage of each type.
 - How many types of seeds are there?
 - Which type of seed has the highest percentage in the sample?

Exhibit Case

- What types of plants can you see in the diorama?
- How are the plants represented? For example, are they seeds, fruit, leaves?
- Which plants have been burned in the hearth?
- How many types of seeds can you find?
- How were seeds collected from the archaeological site?
Clue: look in Drawer 1.
- Find a plant in the diorama that was collected for medicinal purposes.



Seeds:

1. Pumpkin
2. Choke cherry
3. Maize (corn)
4. Bean
5. Pumpkin

Information Sheet on Plants

- How were plants used?
 - Plants were used in almost all aspects of life. Some examples include food, tools, baskets, shelter, transportation, lodging, medicine and paint.
- What parts of the plants were used?
 - Leaves
 - Bark
 - Roots
 - Seeds or nuts
 - Berries and fleshy fruits
 - Flowers
 - Branches
 - Stems
- What parts of plants would be found by archaeologists?
 - Seeds
 - Nuts
 - Charcoal or burned wood and branches
 - Residue on ceramics
- What evidence of maize and horticulture have been found in Manitoba?
 - Maize was first domesticated in Mexico. Early forms of maize cobs were recovered from caves in the Tehuacán Valley that date to 5,400 years ago. By about 4,000 years ago, maize began spreading out of Mexico and reached much of North and South America by 1000 years ago.
 - Historical records record First Nations having gardens with maize at Nettly Creek, located north of the Healing Site.
 - Archaeologists have recovered maize kernels and cupules (where the kernel sits on the cob), scapula hoes and storage pits at the Lockport site located south of the Healing Site.
 - Maize residue has been found on ceramic sherds from the Healing Site.

Laminated Pressed Plants



Buttercup



Arrow-leaved colt's foot



Hog-peanut



Veiny meadow-rue



Saskatoon



Raspberry



Pin cherry



Red-osier dogwood



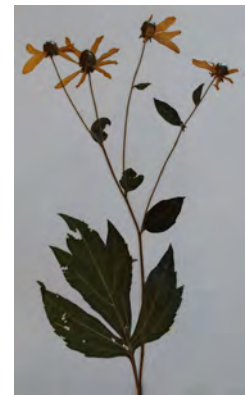
Wild black current



Northern bedstraw



Sweet-scented bedstraw



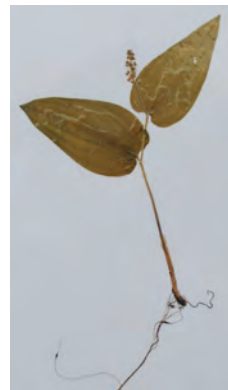
Tall coneflower



Large-leaved avens



Goldenrod



Two-leaved solomon's seal



Solomon's seal

TRADITIONAL GAMES

Subject Areas:

- Physical Education
- Social Studies
- Math

Materials in Edukit:

- Bone Toss Game
- Rattler Game
- Stick Guessing Game
- Stick Dice Game
- Materials to make a stick dice game

Activities:

- Play the games. Instruction sheets are included with the games.
 - Bone Toss Game:
 - Play individually or as a competition.
 - Hand-eye coordination.
 - Rattler Game:
 - Group activity.
 - Develop listening skills, traditionally used for enhancing tracking and hunting skills.
 - Working with other group members.
 - Stick Guessing Game and Stick Dice Game:
 - Group activity.
 - Game of chance or hand game.
 - Deals with probability, pattern recognition, counting.
- Make your own stick dice game.
 - An example of the stick dice game, instructions and materials for making stick dice and tally sticks are provided. Each player will need:
 - 4 stick dice
 - 20 tally sticks
 - 1 tally card
- Research other traditional games on the Internet or by talking to Elders.



Traditional Games

Laminated Instruction and Information Sheets:

The laminated instruction and information sheets are included in the edukit containers.

Stick Guessing Game Instructions (Kakwa 2006)

There are many variations of the stick dice game, ranging from 4 to 11 sticks. This one uses 6 sticks – 2 painted and 4 plain. There can be any number of players. Scoring can be done with sharpened sticks (driven into the ground), small pebbles, or marked down on paper, bark or cloth.

The first player takes the leather mat and lays it flat on the ground in front of them. Place the 6 sticks underneath the mat and while hidden from the rest of the players arrange them in a pattern. The first one who guesses the pattern correctly scores a point. Then that player takes the dice and mat, and the game continues until either a pre-determined time limit is reached, or the tally markers are all gone. The one with the most markers at the end is the winner.

Rattler Game Instructions (Kakwa 2006)

Players stand in a wide circle on smooth ground, with 2 players in the middle of the circle. One is blindfolded; leaving their ears uncovered, and is the “hunter”. The second player is the “rattlesnake” and is also blindfolded, and given the “rattler”. The “rattlesnake” is told to shake the rattler 2 or 3 times, then count to 10 slowly between each series of rattles. The hunter tries to catch the rattler, The rattlesnake should be warned to move slowly and quietly so the hunter can’t track the sound too easily. Someone is chosen to call out “stop” and “go”. This precaution is to prevent players from running into the people forming the circle.

Bone Toss Game Instructions (Kakwa 2000)

The bone toss game, or pin game, was used as a hand-eye coordination test to sharpen reflexes. Various forms exist but the general shape is the same – a cord with weights attached to a skewer on one end, and a piece of hide on the other. The object of the game was to spear both a weight and a hole in the hide with the skewer. Points are scored by the number of weights and holes that are speared. With practice it is possible to catch both a weight and a hole with one flip of the skewer.

To play the game:

- Extend the cord; holding the skewer in one hand and letting the weights drop down the piece of hide.
- Hold the skewer with the point out and angled up and swing the weighted hide end out and up.
- When it starts to descend, try to spear the skewer through one of the holes in the hide.

Making a Stick Dice Game (modified from C. Treptau)

- The objective of the game is to get the most tally sticks. Each person or group has 4 dice sticks and 20 tally sticks.
- Provide four sticks to each group or person to design their own dice sticks:
 - Decorate one side of 2 sticks with a zigzag pattern
 - Decorate one side of 2 sticks with a dot pattern
- Provide each group with 10 1-point tally sticks and 10-10 point tally sticks.
- Play the game by throwing the dice sticks. Combinations of the sticks are worth different points. Scores for each throw are calculated by the combination of how the sticks land. Calculate your score by using the tally chart below.
- Collect tally sticks from each player for the number of points you threw.
- Turn passes to the next player after each throw.
- The winner is the person who has collected all of the tally sticks from the other players.
- Score per roll:
 - 4 pattern sides up 10 points
 - 4 blank sides up 8 points
 - 2 blank and 2 zigzag patterns 6 points
 - 2 blank and 2 dot patterns 4 points
 - Other combinations 0 points

STICK DICE GAME TALLY CHART

4 pattern sides up	10 points
4 blank sides up	8 points
2 blank & 2 zigzag patterns	6 points
2 blank & 2 dot patterns	4 points
Other combinations	0 points

Information Sheet on Traditional Games

- What groups played these games?
 - Variations of these games were played by at least 130 groups representing 30 linguistic families across North and South America (Culin 1907).
- Who would have played these games?
 - Men, women and youth.
- Why were these games important?
 - Recreational activity, entertainment.
 - Developed group interactions, competitions within and between communities.
 - Games of skill that developed hand-eye coordination, concentration, observation, accuracy and reflexes. This provided training to improve hunting techniques, develop strategies and learn about survival.
 - Promoted physical, emotional and spiritual growth.
 - Taught values of excellence, honesty, courage and respect.
 - Youth received guidance and teachings from others.

Glossary

Abrader: A stone used for grinding and polishing or dulling the edge of a tool to aid in flint knapping or hafting (so the sharp edge of the point doesn't cut the sinew).

Adze: An axe-like tool used for woodworking.

Air Photo: A picture of the ground taken from an airplane.

AMS-Radiocarbon Dating: A dating method based on the radioactive decay of carbon-14 contained in organic materials, such as bone.

Antler Hammer (Baton): A club-like hammer made of antler.

Anvil Stone: A stone used to support a piece of raw material being worked on.

Archaeology: The study of people through the material remains left behind.

Archaeological Site: A location that contains evidence of past human activity.

Artifact: Items such as tools or modified bone left behind by humans.

Atlatl: A throwing board that propels a spear or dart weapon.

Awl: A hand-tool often made from bone used to piercing holes.

Biface: A stone tool with flakes removed from two sides.

Burin: A fine chisel like tool used for engraving or carving.

Calcined Bone: Bone that has been heated enough to turn white or blueish in colour.

Celt: An axe type of tool.

Ceramic Sherd: A broke piece of a ceramic container.

Excavation Unit: Usually a rectangle or square area of earth which has been removed in search of past human activity.

Feature: Things that can not be collected in one piece, such as fire hearths or foundations.

Fire-cracked Rock: Rocks that have been cracked or broken by the heat of a camp-fire.

Flake: A thin piece of stone removed from a larger stone.

Flesher: A bone tool notched on the end for cleaning animal hides.

Flint Knapping: The process of making stone tools.

Graver: A tools used to engrave on bone, antler or wood.

Hearth: A fire place, usually circular and lined with rocks.

Mano and Metate: A hand held stone used to grind plants on a stone slab or metate.

Motar and Pestle: A mortar is a stone bowl and a pestle is a cylindrical stone used to crush plants inside the bowl.

Net Sinker: A stone used to sink a fishing net.

Nettling Needle or Shuttle: A bone or wooden tool used to make or mend fishing nets.

Projectile Point: A term that includes arrow, spear and dart points.

Quarry: A location where stone material is removed from the ground.

Replica Tool: A modern reproduction of an artifact, such as a stone projectile point.

Retouched Flake: A stone flake that one or more edge has been modified (flakes removed).

Scraper: A tool usually made from stone or bone used to clean animal hides.

Shovel Test Unit: A quick excavation method using a shovel to test for past human occupation.

Sinew: A tendon from an animal that can be used to attach a tool to a handle.

Spokeshave: A stone tool with a curved edge that could shave a wooden arrow shaft.

Temper: Ground rock or fibers added to clay to prevent cracking when firing ceramics.

Topographic Map: A map that depicts physical ground features.

Utilized Flake: A flake that has been used as a tool.

Whetstone: A stone when moistened will sharpen metal or stone blades.

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Inventory

List of Objects within the Tactile Component of the Edukit:

Note: The catalogue number (R#) has been recorded on each object.

R1	Bone toss game	R41	Chert
R2	Stick guessing game	R42	Swan River Chert (qty. = 2)
R3	Rattler game	R43	Jaspre taconite
R4	Bone awl	R44	Knife River Flint
R5	Bone needle	R45	Selkirk chert
R6	Deer ulna	R46	Agate
R7	Beaver mandible	R47	Porcellanite
R8	Beaver femur	R48	Obsidian
R9	Deer mandible	R49	Chert biface
R10	Bison metacarpal	R50	Knife River Flint retouched flake
R11	Deer vertebra	R51	Rhyolite Biface
R12	Turkey sternum	R52	Jasper taconite biface
R13	Turkey femur	R53	Chert retouched flake
R14	Turkey humerus	R54	Chert scraper; retouched flake
R15	Turkey vertebra	R55	Chert projectile point
R16	Turkey ilium	R56	Knife River Flint Drill
R17	Pelican carpometacarpus	R57	Swan River Chert retouched flake
R18	Pelican femur	R58	Chert projectile point
R19	Clam shell	R59	Knife River Flint graver; retouched flake
R20	Catfish ceratohyal	R60	Knife River Flint scraper
R21	Cleithrum	R61	Chert projectile point
R22	Dentary	R62	Steps in making a projectile point: Obsidian flake, blank, preform, projectile point
R23	Fresh-water drum otolith	R63	Cord-wrapped stick
R24	Basioccipital (cranium)	R64	Cord-wrapped paddle
R25	Operculum	R65	Notched rib
R26	Catfish vertebra	R66	Rib
R27	Bird humerus	R67	Feather
R28	Animal rib with cut marks	R68	Cord-wrapped hawthorn spines (qty. = 3, no catalogue number on objects)
R29	Fish fin	R69	Rim sherd, Healing Site
R30	Bison phalange	R70	Rim sherd, Healing Site
R31	Beaver ulna	R71	Rim sherd, Healing Site
R32	Burned animal bone	R72	Rim sherd, Healing Site
R33	Carved, polished, drilled modified bone	R73	Rim sherd, Healing Site
R34	Clam shell	R74	Rim sherd, Healing Site
R35	Deer antler	R75	Rim sherd, Healing Site
R36	Fish Ceratohyal		
R37	Bird ilium		
R38	Bird bone with ends cut		
R39	Bison maxilla		
R40	Rhyolite		

List of Objects, cont'd:

- R76 Rim sherd, Healing Site
- R77 Rim sherd, Healing Site
- R78 Body sherd
- R79 Body sherd
- R80 Wood handle
- R81 Bone handle
- R82 Antler handle
- R83 Bow for fire & bow drill
- R84 Hand-piece
- R85 Wood hearth
- R86 Spindle
- R87 Spindle
- R88 Atlatl throwing board
- R89 Antler-tipped drill
- R89 Antler-tipped drill
- R90 Knife River Flint tipped drill
- R91 Knife River Flint tipped drill
- R93 Chert tipped drill
- R94 Shaft
- R95 Dart with Knife River Flint point
- R96 Shaft and dart with Knife River Flint point
- R97 Shaft and dart with chert point
- R98 Shaft and dart with metal tip