Bull moose walking on a hill.

Moose Hunting Education Unit

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Sources:

1. Alaska Department of Fish and Game, “Natural Resource Utilization of Four Upper Kuskokwim Communities,” Jeff Stokes, Technical Paper No. 86.
7. Mary Fields and Karen Dullen “Appreciating Caribou: Vadzaih- 3-5 grade.”
8. Mary Osip, “Tanning Moosehide and Making Babish & Rawmane”
9. Rita O’Brien, “Moose Curriculum,” Alaska Native Knowledge Network,
10. Roby Littlefield “Elders in the Classroom

Context: September or February- during moose hunting seasons (one month).

Alaska Rural Systemic Initiative Region: Upper Kuskokwim Athabascan.
Moose cow with two calves stand in the forest.
(Alaska Image Library 2002)

Unit Outline

Lesson One – Historical Moose Hunting in the Upper Kuskokwim

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- Activity 2 – Elder(s) Sharing on the Moose
- Activity 3 – Map Study
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- Activity 5 – Moose Readings
- Activity 6 – Traditional Games to Prepare for Hunting

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- Activity 2 – Elder(s) Sharing on Tools and Methods
- Activity 3 – Moose Hunting in the Past
- Activity 4 – Moose Hunting Today Survey
- Activity 5 – Preparing for the Moose Hunt
- Activity 6 – Counting the Cost of the Moose Hunt
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Lesson One – Historical Moose Hunting in the Upper Kuskokwim

Objectives:

- Students will develop respectful interaction with Elders through active listening and proper communication.
- Older students will develop skill in note taking in their learning logs.
- Younger students will develop in drawing picture representation and pictures in sequencing to demonstrate what they have learned.
- Students will retell what is shared with them in class discussions.
- Students will develop map reading skills.
- Students will understand how moose hunting began.
- Students will identify geographic landmarks and moose hunting areas of the region on the map.
- Students will learn traditional names for places that differ from present day names.
- Students will estimate the moose available in the region for hunting.
- Students will learn about Alaska Board of Game units and hunting restrictions and requirements in their region.
- Students will participate in traditional games that prepared people for the hunt.

Resources and Materials:

- “History of a Moose” (story provided)
- An Upper Kuskokwim Athabascan Elder(s)
- Chart paper, markers
- Regional map (supplied)
- Alaska Native Language Map
- Game Unit 19D Map for Telida region (or appropriate map for your region)
- Map of Moose Densities in Interior Alaska
- Individual learning log notebooks
- Individual unit file folders
- Art supplies for younger students
- KWL (Know – Want to know – Learn) chart
- “THE GAMES” on the Alaska Native Knowledge Network (http://www.ankn.uaf.edu/curriculum/NativeGames/games.htm)
- One or more of the following suggested reading materials:
  - Deneki, An Alaskan Moose by William D. Berry
  - Welcome the World of Moose by Diane Swanson (elementary)
  - Moose by Anthony D. Fredricks – Our Wild World Series (upper level students)
  - Moose – Cellania: a Collection of All Things Moose by Bill Solliker, Jr. and Walter Griggs, Jr.
Activity 1 – Moose History

1. Read “History of the Moose” (story provided summarizing information from “Moose Hunting Historically in the Area”).

2. Read the story as a group with younger students, have a summary discussion of key points, and have students draw a picture for unit books.

3. Older students read story individually and record summary in their learning logs.

4. Read the teaching below. Note key points in learning logs. (Make key points chart with younger students).

Elder Teaching for Moose Hunting
Source of Information: Alaska Department of Fish and Game (Stokes, 1985)

History of the Moose

As the story of the "first moose" returning to the area is told, a party of hunters, quite possibly Cook Inlet Tanainas, encountered an unusually large set of "caribou" tracks in the snow in the upper Middle Fork drainage near the foothills of the Alaska Range. Several younger members of the party followed these tracks for the better part of one day, and late in the evening observed the animal. The moose was dispatched with spears, clubs, and arrows, and a portion of the meat returned to the camp where, after several days of deliberation, an Elderly member of the party voluntarily ate a portion of the unknown type of meat. After it was clear that no illness or other side effects occurred, the balance of the party partook as well.

More Moose Move into the Area

From this point forward, moose became increasingly abundant in the Upper Kuskokwim and over the ensuing hundred years gradually gained importance in the diet and seasonal round of area inhabitants. Despite the increasing availability of this resource, area hunters continued to favor the more plentiful caribou until the 1920s, when declines in caribou populations and shifts in range combined to reduce the availability of this species.
Nikolai hunters generally conduct their open-water hunting activities within the Upper Kuskokwim Controlled Use Area portion of Game Management Unit (GMU) 19(D) along the Kuskokwim River between and inclusive of the Big River upstream to a point just below the confluence of the Swift and North Fork, a distance of nearly 250 river miles (Figs. 2, 8, 9). Additionally, Nikolai residents also hunt up the Salmon River as far as 130 river miles from the community, the South Fork and Little Tonzona, and East Fork, and the lower Slow Fork to a point approximately 160 river miles from Nikolai (Figs. 2, 8, 9). Of these, the North Fork is probably the most heavily utilized area among Nikolai hunters in search of fall moose. Lesser tributaries, lakes, and sloughs within area river corridors are also searched for moose during summer months. Some Nikolai households also derive a portion of their annual moose meat requirements from guide-related activities in the Alaska Range foothills of GMU 19(C). Winter moose hunting activities focus on many of the same areas used during the late summer, as well as large areas away from the river corridors only accessible when there is a snow cover (Fig. 9).
The Places People Hunt Moose in Telida

During the open water months, Telida moose hunting activities range from Wilson Hill on the North Fork of the Kuskokwim River to the west up the Swift Fork to and including the lower portions of Highpower Creek to the northeast, a distance of approximately 120 river miles (Fig. 9). Additionally, moose are sought along the various lakes, creeks, and sloughs within the river corridor. The extent of hunting areas utilized by Telida hunters greatly increases during the winter, as locations between the river corridors are accessible with snowmobiles (Fig. 9).

5. Make a KWL (Know – Want to know – Learn) chart for this lesson. Make a class chart with the younger class and the older students can make their own charts. See Sample in Appendix.
   a. Title: Moose Hunting
   b. Make three columns: 1st column – What we KNOW; 2nd column – What we WANT to know; 3rd column – What we LEARNED

6. Have a class discussion to share what students know about moose and moose hunting and record under “What we know” column.

7. Brainstorm what they would like to know about moose and moose hunting and record under “What we want to know” column.

8. Save the chart for future reference during the unit to add to what you learned.
Activity 2 – Elder(s) Sharing on the Moose

1. Invite an Elder or group of Elders to share moose stories, traditions and identification of traditional hunting sites.

2. Prepare students beforehand to receive the Elder(s), practice listening skills, and how to properly ask questions.

3. The teacher will discuss active listening points, communication points, and preferring of Elders points (Refer to “Elders in the Classroom” by Roby Littlefield).

4. Have students share together their experiences with Elders. Make a list on chart paper of the key points to remember to honor and to receive from time spent with the Elder(s).

5. Brainstorm with students questions to ask the Elder(s) and make a list of questions on chart paper. Older students can copy the list in the learning logs.

6. Introduce and welcome the Elder to the class and give the Elder(s) liberty to share on the moose.

7. As the Elder shares, older students can take a few notes especially on points that answer some of the questions listed. (Remind students beforehand that listening and honoring the Elder is more important than note taking, so that note taking should be quick and short. Teacher should take notes for follow up discussion with class.)

8. Provide a regional map of the area around the village for the Elder to identify hunting areas and traditional names for areas that are different from the current names of the areas. Sample map located in Appendix.

9. At the appropriate time, students can ask additional questions and older students can record the answers to questions in their learning logs.

10. Have a review and discussion with the class about what the Elder shared and make a list on the chart paper of key points.

11. Record information on hunting areas and traditional names of geographical places on classroom regional map.

12. Older students can write a short report on the time with the Elder(s). Younger students can draw a picture about the Elder’s sharing with some key label words.

13. Fill in KWL chart about what they learned from the Elder(s) sharing time.

14. Students keep all unit materials in individual unit file.
Activity 3 – Map Study

(Note with younger students you can do the map projects together and older students can work in small groups or individually)

1. Provide students with copies of the following maps and give a brief overview of each map. See Appendix for all maps.
   - **Regional map**: map of the local area
   - **Alaska Native Language Map**: map of the various language groups and identify regional language group.
   - **Map of Moose Densities in Interior Alaska**:
     - Alaska Board of Game Units
     - Purpose of the units
     - Identify the regional unit(s) (Re: game unit 19D is in the Telida village region)
     - Identifying densities
       - What is density? Density is the number of inhabitants, dwellings, or the like, per unit area.
       - What is a square mile? Square mile - a unit of area measurement equal to a square measuring one mile on each side.
   - **Regional Game Unit Maps**: (Re: For Telida Village regional area the map of Alaska Board of Game Unit 19D).
     - Map of specific Alaska Board of Game Unit
     - Regulatory requirements of the area

2. Divide students into small groups or work partners to work on maps. Younger students can discuss maps together.

3. Have students identify, label and highlight moose hunting areas on the regional map identified by the Elder.

4. Have students draw the borders of Game Unit 19D in Telida Village regional area (or other relevant game units in other village areas) on regional map using an assigned color marker.

5. Have students identify moose density in the regional area from studying the moose population density map. If there are various densities within the regional area have them indicate the difference in areas on the map.

6. Have the students compare Alaska Language map with the Moose densities map.
Which language group(s) has the most moose by the density map?
Which language group(s) has the least amount of moose?

7. Make a comparison chart of the language groups and moose densities (Upper level students only).

8. Make a Display Area for the Classroom Map and have the students put individual maps in their unit folder.

9. Fill in KWL chart about what they learned from the map study in “What we learned” column.

Activity 4 – Moose Math: Moose Population of the Region
(Note this activity is only for those with multiplication skills)

Approximate the average number of Moose in the region:

1. Determine the number of moose per square mile based on density estimates. Record answer in learning logs.

2. Prepare map to determine the number of square miles in the regional hunting area.
   - Determine the scale of the regional map (miles per inch).
   - Make a measuring tool based on the map scale to measure miles.
   - Draw a box around as much of the region as you can. Box in as much of the area as possible in a square or rectangle.

3. Calculate the area square miles.

   **For a square** (all sides equal side) - Measure the miles on a side of the square.

   Where \( S = \) miles for one side and \( A = \) area’s square miles
   \[ S^2 = A, \text{ or } S \times S = A \]

   **For a rectangle** (length sides equal and width sides equal) – Measure a length side and width side.

   Where \( L = \) miles for one side of length, \( W = \) miles for one side of width

4. Use calculated figures to estimate average number of Moose in the region.

   Where \( A = \) area square miles, \( D = \) moose density per square mile, and \( M = \) estimated number of Moose in area.
   \[ A \times D = M \]

5. Make a class chart of the results and display in the classroom.
Activity 5 – Moose Readings

1. Select a book or books from the Moose reading books listed below:
   - Deneki, An Alaskan Moose by William D. Berry
   - Welcome the World of Moose by Diane Swanson (elementary)
   - Moose by Anthony D. Fredricks – Our Wild World Series (upper level students)
   - Moose – Cellania: a Collection of All Things Moose by Bill Solliker, Jr. and Walter Griggs, Jr.

2. Read books as class, with partners, or groups, or individually.

3. Have younger students draw a picture progression of key points in book.

4. Have older students write a short book report on one of the books and record in learning log several things that they learned about Moose from the readings.

5. Record new things learned on the KWL chart.

Activity 6 – Traditional Games to Prepare for Hunting

Information

The most important reason that Native people played games was to develop their bodies and minds for hunting. They needed to develop strength, agility and creative thinking to survive the harsh conditions of the traditional times. The boys began their training at an early age to develop and improve the eye-hand coordination that was needed to hunt game successfully. (from “Athabascan Games” – level 3 by Cora Maguire, Doyon Foundation; p10).

1. Try one or more of the following games from “THE GAMES” on the Alaska Native Knowledge Network (http://www.ankn.uaf.edu/curriculum/NativeGames/games.htm)

   Some examples:

   **Arm Pull:** Consists of two athletes sitting on the floor facing each other, positioning themselves so that one leg crosses over the opposite leg of the other player. They lock arms at the elbows with fists down, and when given a signal from a judge, begin pulling straight back, no jerking or regripping allowed. The winner of two out of three attempts wins the match. This game was developed as a show of strength and provided entertainment while on the hunt.

   **Wrist Carry:** Consists of two people carrying an athlete on a 48 inch long, 1 5/16 inch diameter stick. The carriers will place the stick in front of the athlete who is sitting on the floor. The athlete will position his wrist (either right or left) in a hook
position around the middle of the stick, placing the free hand around the forearm. The athlete’s hand or wrist cannot touch his face for support while being carried. The athlete’s legs can be in a crossed legged position, or however the athlete feels is an appropriate sitting position. The pace is approximately one step per second. The athlete who travels the furthest distance wins. This game’s origin is traced back to successful hunters carrying game back to their villages. The hunters had to develop strength and endurance to carry the game over long distances.

**Indian Stick Pull:** Consists of two athletes sitting on the floor facing each other holding onto a stick with one hand. The free hand must be on the other athlete’s ankle. At a given signal both athletes begin to pull the stick without jerking or twisting but only a straight, direct pull. The athlete who out-pulls the final challenger wins.

2. Have students share with family, Elders and neighbors about what they learned about games that prepare for the hunt. Ask them what games they know of that prepare for the hunt.

3. Have a class discussion about what they found out from family, Elders and neighbors about traditional games that prepare for the hunt.

4. Have older students record what the learned in their learning logs and younger students can draw a picture and label it to remember games.
Lesson Two – Tools for Hunting Moose

Objectives:

- Students will develop respectful interaction with Elders through active listening and proper communication.
- Older students will develop skill in note taking in their learning logs.
- Younger students will develop in drawing picture representation and pictures in sequencing to demonstrate what they have learned.
- Students will retell what is shared with them in class discussions.
- Students will understand the traditional use of moose hunting tools and methods and how the tools and methods have changed.
- Students will use traditional tools and methods for preparing moose hide for use.
- Students will plan for a moose hunt and set up a moose camp.
- Students will participate in native games that build skills for using tools and methods in moose hunting.

Resources and Materials:

- An Upper Kuskokwim Athabascan Elder(s)
- Experienced hunters
- Chart paper, markers
- Individual learning log notebooks
- Individual unit file folders
- Art supplies for younger students
- KWL (Know – Want to know – Learn) chart
- Babiche or rawmane (already made up and materials needed to make it)
- Experienced hunters rifles, boats and outboard motors in the village
- “THE GAMES” on the Alaska Native Knowledge Network
- One or more of the following books: *(Note: Books are available through Todd Communications see appendix for more information)*
  - *Deneki, An Alaskan Moose* by William D. Berry
  - *Welcome the World of Moose* by Diane Swanson (elementary)
  - *Moose* by Anthony D. Fredricks – Our Wild World Series (upper level students)
Elder Teaching for Moose Hunting

Source of Information Alaska Department of Fish and Game, (Stokes, 1985)

Example of a Moose snare set on a trail. (Legros 1981)

Caribou Hide Snares Used for Catching Moose

Moose fences, employed by Athabaskans of the Tanana Valley (Andrew 1977) were apparently not utilized by Upper Kuskokwim inhabitants. Some older Nikolai inhabitants believe moose may have been taken with caribou hide snares affixed to stout overhanging trees during the winter as they traveled through the brush along game trails.

Skin Boats Made from Caribou and Moose

In the seasonal round characteristic of the early 1900s, fall hunters in the Alaska Range foothills often took several moose at a time. While a portion of the catch may have been cached for winter retrieval, makeshift boats consisting of several raw moose or caribou skins stretched over frame of naturally curved white spruce tree roots were sometimes used to float the party, gear, and meat of caribou, sheep, and moose back downstream to one of the winter small single-family communities characteristic of the area during this period of time. The last moose skin boat trip on the South Fork, from Post Lake in the Alaska Range to Nikolai, a distance of more than 75 river miles, occurred during the late 1930s or early 1940s, according to one Nikolai resident.
Aluminum river boats between 18 and 24 feet in length are most commonly employed, not only by Nikolai and Telida hunters, but by hunters from other communities as well. Most are outfitted with 15 to 40 horsepower outboard engines. Hunters and summer travelers generally operate a single engine, but a few people use two outboard motors in tandem. Most hunters believe the metal boats overall "out-perform" the longer, heavy wooden boats traditionally used. With reasonable care, an aluminum boat can last for many years, whereas rot presents eventual problems even for the best maintained wooden boat. The short length of aluminum boats makes them easy to maneuver in narrow and winding creeks and lake outlets and their light weight facilitates carrying the boat into nearby lakes. Drawbacks include their comparatively small load capacity and, according to one Telida hunter, they are difficult to pole or paddle in shallow water and winding creeks where the motor cannot be utilized.

Bullets and Guns

Among Nikolai and Telida hunters, there are many common features associated with equipment employed for moose hunting. A wide range of large caliber rifles is used, although .270, 30.06, and 7 mm magnum rifles are probably the most commonly employed. Rifles of 30.30 caliber, still common in some Tanana River villages (Andrews and Napoleon 1985, are seldom used today for moose hunting among Nikolai and Telida inhabitants. While most area moose hunters utilize scope equipped rifles, many others prefer open sights. There are advantages associated with each. Scopes are useful for long distance shots and for spotting purposes while open sights are good for close targets and low light situations. Rifle scopes are also subject to fogging in certain weather conditions and misalignment if roughly handled.
People that Make Up the Hunting Party

Hunting party composition varies, with members of the nuclear family often forming the optimum group. At times, party members are part of the same extended family, while other hunting parties consist of close friends. Although moose hunting is generally an activity undertaken by men, women and older girls may accompany hunting parties. Assisting in the butchering and field preservation process, older women may, on occasion, shoot a moose in the company of their husbands or other close relatives. Men and older boys most often undertake carrying or “packing” meat to the boat or river edge.

Activity 1 – Traditional Weapons and Methods for Hunting Moose

1. Make a KWL (Know – Want to know – Learn) chart for this lesson. Make a class chart with younger class and older students can make their own charts.
   a. Title: Tools for Moose Hunting
   b. Make three columns: 1st column – What we KNOW; 2nd column – What we WANT to know; 3rd column – What we LEARNED

2. Have a class discussion to share what students know about past and present tools for hunting moose and record under “What we know” column on KWL chart.

3. Brainstorm what they would like to know about tools for hunting moose and record under “What we want to know column” on KWL chart.

4. Save the chart for future reference during the unit to add what you learned.

Activity 2 – Elder(s) Sharing on Tools and Methods

1. Invite an Elder or group of Elders to share about tools and methods of moose hunting.

2. Prepare students beforehand to receive the Elder(s) by reviewing active listening points, communication points, and preferring of Elders points from Lesson One.
3. Brainstorm with students questions to ask the Elder(s) and make a list of questions on chart paper. Older students can copy list in the learning logs.

4. Introduce and welcome the Elder(s) to the class and give the Elder(s) liberty to share on the moose hunting tools and methods.

5. As the Elder(s) shares, older students can take a few notes especially on points that answer some of the questions listed.

6. At the appropriate time, students can ask additional questions and older students can record the answers to questions in their learning logs.

7. Have a review and discussion with the class about what the Elder(s) shared and let several students retell some of the Elders’ stories.

8. Fill in KWL chart about what they learned from the Elder(s) sharing time.

Activity 3 – Moose Hunting in the Past

1. Ask Elder(s) if they have ever used a moose snare. Find out if any one knows how to make Babiche or rawmane. If there is someone who knows, ask them to teach you how to make it.

2. Gather materials needed to make babiche or rawmane. (If no one can be found that knows how to make it, a good reference for making it can be found in “Tanning Moosehide and Making Babish & Rawmane” by Anna Mae Osip. This booklet prepared for Tanana Chiefs Conference, Inc. Written for the Tanana Survival School (1974) by the Anchorage Community College’s Adult Literacy Laboratory.)

3. Try making a moose snare out of babiche or rawmane. See example picture in the teaching section.

Activity 4 – Moose Hunting Today Survey

1. Have a class discussion about moose hunting today and let students share personal experiences and stories from family and friends.

2. Develop a survey list for interviewing family, friends and neighbors on the different tools used for moose hunting today. Brainstorm what to ask about tools and methods.

   Examples:

   - Rifles that work best for moose
   - Shells preferred
Boat use and preference
Outboard motor use and preference
Hunting tips
Snowmachine use and preference
Four wheeler use and preference
River hunting
Overland hunting
Best times and places

3. Compose a survey checklist from brainstorm ideas and make copies for each student for older students which they can use to interview 2-4 people with moose hunting experience.

4. Review the results of the interviews and compile the data from the interviews and look for consistency of answers. Use chart paper to sort through the process.
   - Do any specific kinds of tools stand out?
   - Do any specific kinds of methods stand out?
   - Is there a kind of rifle that is preferred?
   - Is there a kind of rifle shell that is preferred?
   - Is river or overland moose hunting in the area preferred?
   - Are there consistent preferred moose hunting areas?

5. Make a display chart that summarizes what was found out by the results. This can be done as a class (especially with younger students), individually, or in small groups.

6. Display chart(s) in the classroom.

7. Update learning logs and KWL charts about what we learned from the survey.

**Activity 5 – Preparing for Moose Hunt**

1. Talk to experienced hunters in the area preparing for moose hunting and find a hunter or hunters that would be willing to share the process with students.

   Ask the hunter(s) to share and demonstrate on:
   - Weapon care, preparation and supplies
   - Preparing boat, snow machine or four-wheeler
   - Supplies needed and why
   - How to set up a hunting camp

2. Have hunter(s) utilize students to assist in process from hands-on preparation through field trip. If several hunters are preparing and willing to volunteer in hands-on portion, the class can be divided into small groups of 2-3 to accompany the hunter in his preparation.
3. Have hunter volunteer set up hunting camp with students in short walking distance or short boat ride from the village area.

4. Review with the class all that is needed to prepare for moose hunting and make a comprehensive supply list and activity list.

   Examples:
   Weapon preparation/purchase
   Rifle shells
   Butchering tools
   Knifes and cleaning tools
   Camp gear: tent, sleeping gear, wench, meat carrying bags and rope for hanging meat.
   Boat, snowmobile or four-wheeler preparation, extra fuel
   Supplies: water, food, matches, mosquito repellent, extra clothes, rain or snow gear, boots, etc.

5. Update the KWL chart with what we learned about preparing for moose hunting.

6. Older students can also update learning logs with what they experienced personally during this activity.

7. Younger students can draw pictures showing the process of preparing for the hunt and setting up hunting camp.

8. Students store all activity materials in individual unit file folders.

Activity 6 – Counting the Cost of the Moose Hunt

Utilizing the supply list that was developed in Activity #5, estimate the cost for a hunting party of three to prepare for hunting if they had to purchase all the weapons, ammunition, tools, and supplies.

(Note: This activity is written for older students with developed problem solving skills. It can be modified for younger students to a class discussion of costs.)

Review the list in Activity #5 and ask the students to guess how much it would cost three people for three days of hunting.

1. Divide the students in work partners or small groups. Give each set of work partners or group a portion of the list to find out the cost per item. Assign the food costs to one group including making a three day food supply list.

2. After each set of partners or group finds the costs for their items, compile all the costs information on one list.

3. Determine the costs that are per individual that must be multiplied by 3. Calculate the group cost by totaling individual cost and multiplying by 3.
4. Determine the overall cost by totaling the shared items (like boat and motor, tent, fuel, food, etc) and adding the totaled individual costs to the shared cost.

5. Review the cost guesses that the class made compared to the calculated costs. What was the difference? Any guess close to actual cost?

6. Now go back to the group and determine ways to cut cost. (For example: borrowing rifles, making sure one of the hunters has a boat, one has a tent or materials to make a shelter).

7. Have each group’s cost cutting ideas and determine if their cost cutting ideas are realistic. Which group did the best at cutting cost?

8. Have students record what they learned about the cost of hunting in their learning logs.

**Activity 7 – Traditional Games to prepare for Hunting**

As the students learned in the first lesson Alaska Native games helped develop strength and skills for hunting. Below are two more games that develop skills for the hunt from “THE GAMES” on the Alaska Native Knowledge Network (http://www.ankn.uaf.edu/curriculum/NativeGames/games.htm)

**Snowsnake:** Starts with the athlete grasping the straight spruce stick (about 150 cm long and 2 cm in diameter and sharpened at one end), running up to the throwing line, then throwing the stick underhand so that it slides over the snow as far as possible. Each athlete has three attempts. The winner is the one who throws the snowsnake the longest distance. This game was originally based on the need to develop hunting skills. Hunters used this style of weapon to bring down moose or caribou.

**Pole Push:** Starts with a pole of about 5 meters long by 10-15 cm in diameter. A circle about 7 meters in diameter is also marked off. Two opposing teams try to push forward on the pole pushing the other out of the circle. Teams must push forward at all times and are not allowed to swing the pole or to let go. A team member is not allowed to move up on the pole to avoid being pushed out. The best two out of three pushes wins the match. This is an Indian game which origins come from pushing heavy boats into the water.
Lesson Three – When and How to Hunt Moose

Objectives:

- Students will develop respectful interaction with Elders through active listening and proper communication.
- Older students will develop skill in note taking in their learning logs.
- Younger students will develop in drawing picture representation and pictures in sequencing to demonstrate what they have learned.
- Students will retell what is shared with them in class discussions.
- Students will be familiar with the traditional seasonal times for hunting moose and the seasonal restrictions that affect hunting today.
- Students will understand the traditional methods of moose hunting and how methods have changed.
- Students will use traditional methods tracking of moose.
- Students will review the moose hunting regulations for the regional area.
- Students will complete a KWL Chart on the ‘when and how’ of moose hunting.
- Students will complete a comparison chart of non-regulated hunting days and present day regulated hunting.

Resources and Materials:

- An Upper Kuskokwim Athabascan Elder(s)
- Experienced hunters
- Chart paper, markers
- Individual learning log notebooks
- Individual unit file folders
- Art supplies for younger students
- KWL (Know – Want to know – Learn) chart
- Chart paper, markers and journals
- Alaska Game Unit 19 Regulations (In Appendix)
- Birch bark for calling a moose
- Books: Moose by Art Rodgers; In the company of Moose by Victor Van Bullenborges (see appendix for information books available through Todd Communications)
The Seasons People Hunted the Moose

Without a doubt, the most important hunting period during the early 1900s was the late summer/early fall season. Hunters frequently harvested both sexes of moose. Additionally, hunters sought moose throughout the year on both a primary and incidental basis.

How the People Picked the Moose They Hunted

Traditionally, moose were hunted on nearly a year-round basis. Several factors were taken into account by early-day hunters in choosing the sex of moose to be hunted. These factors included seasonality and availability. When availability or choice permitted, the fat content of the targeted animal was a foremost consideration. Fat moose were valued for their nutritional contribution and, among hunters, the quantity of fat was often an indication of meat quality. Generally, the meat of bull moose (ch'iyledra) was slightly favored year-round with the possible exception of late fall and early winter. Barren cows (diyoze) were most favored during the late fall and early winter, although they, like bulls, were acceptable year-round when necessary.

The Moose the People Didn’t Hunt

Cow moose bearing or nursing calves, characterized as being “skinny,” were avoided when possible. Hunters also avoided harvesting pregnant and nursing cows, recognizing their role in species perpetuation. Nonetheless, in the absence of alternatives, pregnant cows were sometimes taken. In these instances, mature fetuses were also eaten. Likewise, when nursing cows were harvested, hunters also dispatched the accompanying calf. The meat of calf moose (ditseje) was considered tender but bland.

Other sex selection factors considered by early-day hunters included the condition of the hide. Generally, the thinner hide of early summer cows was favored for babiche.
production while fall bulls yielded the thicker skins area residents desired for tanning purposes. This pattern of user preference differs little today.

**Hunting in Open Water**

During the open-water months, hunting activities are limited to river corridors including nearby lakes, sloughs, swamps, and navigable creeks. Even though appreciable numbers of moose are taken opportunistically, the harvest of others requires employment of certain time-proven principles or practices. There is a pronounced or recognizable series of hunting practices that make up strategies employed during the open water months. Hunting parties usually employ a search strategy along local rivers, generally confining their activities to a corridor no more than three quarters of a mile wide on either side. This corridor is usually searched using motor-driven boats and on foot to reach lake and swamp areas within the search zone. A variation of this approach is to search lake margins using canoes if a promising "sign" is found. Because many lakes extend for more than a mile away from the river, canoes effectively increase the size of search areas. These hunting strategies are most often effective when combined with the intimate knowledge most Nikolai and Telida hunters have of moose behavior.

**Hunting Moose in Lakes and Swamps**

Certain lakes and swamps have a long history of productivity (often going back 30 or more years) and are frequently visited by hunters who, at times, will wait in concealment for short periods in anticipation of a moose entering the lake or opening from the edge, especially if fresh tracks or other "signs" such as freshly broken-off (eaten or "rubbed") vegetation are found nearby. Observation of a moose at one of these locations may require waiting for the animal to leave the water or move closer to the hunting party. Wind conditions are critical in both moose movement and hunting strategy as moose tend to move with the wind to their back. Consequently, hunting from a downwind position is an essential tenet of successful strategy.

**Hunting Moose on the Rivers**

As hunters travel along a river, they watch for recently made tracks along sand bars. A substantial portion of summer and fall harvest occurs in immediate proximity to area rivers when moose are observed standing on the shore or swimming across the river.
These moose often are immediately dispatched, although hunters will wait until the moose is safely away from the water to minimize the chance of it falling into the stream or river. In those instances where the animal falls into the river, the moose is towed as close to shore as possible with an engine-powered boat. A few Nikolai hunting parties carry small manual cable winches with them, making removal of the moose from the river possible, although not easy. When other hunting parties are nearby, additional help may be enlisted to bring the moose ashore.

**Best Time of Day to Hunt Moose**

Most hunters recognize early morning and late evening hunting as being the most productive, with the latter period viewed as somewhat better. During these periods of the day, moose are more active and consequently more visible, although during the fall bull moose are relatively active throughout the day and night.

![A bull moose crosses a lake.](image)

**How to Call Moose**

During the fall, many Nikolai and Telida hunters utilize sound to "call out" bull moose often from great distances. Sounds that attract moose include imitating the "grunting" of bull moose. Bulls will attempt to locate their audio rival, often traveling a number of miles towards the source of the sound. The vocal call is sometimes enhanced through use of a birch bark "megaphone." In addition, bulls are often attracted by scraping sounds associated with antlers in the brush. These sounds are created by scraping a boat oar, piece of rolled birch bark, portion of an antler, moose scapula, or a carved drift log root through the brush or on the side of a tree. Standing dry spruce trees are especially resonant.

Calling in the vicinity of hills tends to cause the sound to carry great distances. Nikolai hunters avoid "over-calling" a moose, lest he become"spooked" or suspicious and remain hidden in the brush. After each series of calling and/or scraping, hunters stop and listen for a period of time for a response. Often the response is slow and many hunters recount incidents where a moose enters their camp at night, hours after initially being called.
**Hunting Moose During Winter**

Hunting of moose during the winter is both an incidental and primary activity, depending on the hunter. Incidental harvest occurs most often in conjunction with trapping-related activities throughout the area, while hunters engaged in deliberate harvest activities will often seek moose in areas having a history of containing wintering moose.

**Moose Tracks**

If the winter hunter or traveler encounters moose tracks, he initially ascertains the freshness of the imprint. This is determined by the amount of fresh snow or drift snow in the hoof mark and the amount of "crust" characteristic of disturbed snow. Often hunters are able to make this latter determination by dragging a foot through the snow as they pass over the track. Most hunters also are able to quickly determine the direction the moose traveled indicated by small piles of snow pushed ahead of each foot on the leading edge of each print. If the tracks are reasonably fresh, the hunter often attempts to broadly circle the animal through interconnecting openings in the ground cover using a snowmobile.

**Wind Conditions**

Wind, important during the summer, is a critical element of winter hunting activities. Wind conditions dictate the direction a hunt will take. A favorable breeze or wind permits hunters to approach the moose from downwind without being detected. This is particularly important during the winter when, as noted earlier, sound carries extremely well.

**Hunting Moose on Snowshoes**

Because moose often inhabit areas of dense brush featuring deep snow, it is often impractical to undertake direct pursuit or follow the tracks with a snow machine unless the tracks are particularly fresh. Consequently, it is often necessary to conduct at least part of the hunt on snowshoes, especially later in the winter. When several men are involved, hunters disperse themselves and wait at strategic locations around the area the target moose is believed to be in. These locations, often along the edge of a swamp, lake, or other opening, usually offer an unobstructed view where a clear shot can be made should the moose, being pursued or "driven" by hunters on snowshoes, emerge from the
brush or trees. Despite the "menial" appearance of these roles, many times these observers are responsible for dispatching the hunted animal.

**Activity 1 – Traditional when and how of Moose Hunting**

1. Make a KWL (Know – Want to know – Learn) chart for this lesson. Make a class chart with younger class and older students can make their own charts.
   a. Title: When and how of moose hunting
   b. Make three columns: 1st column – What we KNOW; 2nd column – What we WANT to know; 3rd column – What we LEARNED
2. Have a class discussion to share what students know about past and present tools for hunting moose and record under “What we know” column on KWL chart.
3. Brainstorm what they would like to know about when and how to hunt moose and record under “What we want to know column” on KWL chart.
4. Save the chart for future reference during the unit to add to what you learned.

**Activity 2 – Elder(s) Sharing on Traditional Seasons and Methods of Moose Hunt**

1. Invite an Elder or group of Elders to share about when and how to moose hunt in earlier days.
2. Prepare students beforehand to receive the Elder(s) by reviewing active listening points, communication points, and preferring of Elders points from Lesson One.
3. Brainstorm with students questions to ask the Elder(s) and make a list of questions on chart paper. Older students can to copy list in the learning logs.
   - Main harvest season
   - Year round hunting
   - Selecting moose to hunt
   - Winter hunting
   - Open water hunting – rivers swamps and lakes
   - Best time of day to hunt
   - How to find moose
   - How to call a moose
   - Reading moose tracks
   - Wind conditions
   - Where to inflict the wound that kills.
   - Where to avoid wounding that damages meat
4. Introduce and welcome the Elder(s) to the class and give the Elder(s) liberty to share on the when and how they hunted moose.
5. At the appropriate time, students can ask additional questions and older students can record the answers to questions in their learning logs.

6. Have a review and discussion with the class about what the Elder(s) shared and let several students retell some of the Elders’ stories.

7. Fill in KWL chart about what they learned from the Elder(s) sharing time.

8. Have older students record notes on hunting traditions shared by the Elder(s) and younger students draw pictures.

**Activity 3 – Reading Moose Tracks and Calling Moose**

1. Review what the Elder(s) shared about moose tracks. Make a list on chart paper of what to look for in moose tracks.

   ![Moose Tracks Diagram](image)

   **Source of Information** Alaska Department of Fish and Game, *(Hunt Alaska)*

   Moose have large, cloven hooves that are more pointed than elk. They have an alternating stance that leaves an overlapping impression of tracks. Moose tend to keep to well defined, wide trails.

2. Review what the Elder(s) said about Calling Moose.

3. Take a field trip to nearby area to hunt for moose tracks and practice calling moose.

   - Make birch bark megaphone from birches in the area and practice calling with grunting sounds through rolled up birch bark.
   - Make imitation antler scraping sounds with the rolled birch bark through brush and on the sides of trees.
   - If you find tracks, discuss the conditions of the tracks from points discussed to determine the freshness of the tracks.

**Activity 4 – Moose Hunting Regulations**
1. Examine Moose Hunting regulations in Game Regulations booklet and Game Unit 19D restrictions. Make a list of basic regulations on Chart paper. (McGrath Unit 19 is located in Appendix)

2. Compare the list of regulations with what the Elder(s) shared about hunting traditions (can review learning log notes and KWL chart column “What we learned”.)

3. Make a comparison chart using a Venn Diagram – two intersecting circles (See example in appendix)
   - Title the diagram “Moose hunting”
   - Label first circle “Non-regulated Days.” Inside of the circle, write down things that were a traditional part of hunting that are no longer allowed under moose hunting regulations.
   - Label second circle “Regulated Days.” Write inside of that circle hunting practices that are allowed under the restrictions.
   - In the shared area of the circles write down things that are alike from both circles.

   Examples of similarities: Main harvest season late summer/early fall; Pregnant moose and calf not hunted.

   Examples of differences: Year round hunting available -- Hunting limited to specific days; Hunted male and female moose --- Hunting only Bull Moose.

Activity 5 – Moose readings

1. Read information on the seasonal activities of Moose and hunting or tracking moose. (*Note: Teacher should summarize information for younger students and share pictures*)

   Two recommended books:
   - *Moose* by Art Rodgers (middle school to high school)
   - *In the company of Moose* by Victor Van Bullenborg (upper level students and good resource for teachers – excellent pictures)

2. Have older students record information on seasonal activities of moose, when and how of hunting moose from readings in learning logs.
Lesson Four – Uses of a Moose

Objectives:

- Students will develop respectful interaction with Elders through active listening and proper communication.
- Older students will develop skill in note taking in their learning logs.
- Younger students will develop in drawing picture representation and pictures in sequencing to demonstrate what they have learned.
- Students will retell what is shared with them in class discussions.
- Students will learn traditional uses of a moose.
- Students will observe and participate in hunting and butchering a moose.
- Students will prepare and tan moosehide and make babiche.
- Students will learn parts of the moose.
- Students will learn concerns and problems of field butchering.
- Students will learn how to pack moose out of field.
- Students will prepare a moose recipe and make jerky.

Resources and Materials:

- Upper Kuskokwim Athabascan Elder(s)
- Community member(s) experienced in moose hunting and butchering
- Chart paper, markers
- Diagram of the anatomy of a moose
- A fresh kill and fresh moosehide, if possible
- Moose meat for making jerky
- Student learning logs
- Student unit folders
- “Tanning Moosehide and making babish & Rawmane” by Anna Mae Osip. This booklet prepared for Tanana Chiefs Conference, Inc. written for the Tanana Survival School (1974) by the Anchorage Community College’s Adult Literacy Laboratory.
- Tools for tanning fresh moose hide
  - Flesher tool
  - Blunt scraper
  - Sharp knife
  - Scribing board
  - Large sticks for twisting wet moosehide
  - Cutter
  - Smokehouse frame
  - Babiche/Rawmane drying frame
- Alaska Native Knowledge Network (www.ankn.uaf.edu)
Elder Teaching for Hunting Moose

Source of Information: Alaska Department of Fish and Game: (Stokes, 1985)

Uses of Moose Hide

Other sex selection factors considered by early-day hunters included the condition of the hide. Generally, the thinner hide of early summer cows was favored for babiche production while fall bulls yielded the thicker skins area residents desired for tanning purposes. This pattern of user preference differs little today.

Keeping the Meat Clean in the Field

Among Nikolai and Telida residents, an important element in field butchering of moose is keeping the meat clean. Hunters are careful to not allow the meat to come in contact with dirt, debris, and waste products from the abdominal cavity although contamination by the latter is not considered critical. Consequently, as each piece of meat is removed from the carcass, it is placed on a bed of brush, a clean tarpaulin, or in the absence of these, on the inside of the skin. Despite the absence of contaminants such as sand during the winter, hunters often place the meat on a tarpaulin or brush to prevent loss under the snow and to permit some of the blood to drain.

Butchering the Head and the Skin

The head is usually removed with a knife by cutting through the first neck joint located immediately behind the ears, although in rare instances Nikolai and Telida hunters use an axe or meat saw for this task. Next, the skin is either partially or completely removed, taking care to avoid making unnecessary holes while at the same time leaving only a minimal amount of meat attached. Nikolai and Telida hunters prefer to skin one side of the moose at a time, removing the legs and "backstrap" meat from the carcass.

Salvaging the Heart, the Kidneys and the Liver

The heart, kidneys, and liver are nearly always salvaged. The exception to this occurs during the fall when the bull moose are in rut and the liver and kidneys are swollen or discolored and are considered inedible. The lower intestine is also saved for either cooking at special occasions such as potlatches or for addition to meat soups.

This section is removed from the abdominal cavity as a bundle, and after the interconnecting adhesive membranes are cut, comes to resemble a long tube. People carefully roll this easily-torn intestine inside out while it is still warm and pliable. The tripe is removed from the inside of the "first stomach" (rumen) and saved for cooking. Field processing of the "guts" is most often done by men although in recent years women, when present, now sometimes undertake this task.
Salvaging the Intestines and the Organs

Next, the moose is carefully rolled over onto the skin or brush pile where similar tasks are performed. At this point, the intestinal sac is carefully removed from the lower abdominal cavity in one piece. Removal of the viscera is undertaken as the animal lays on its right side, as this is said to be "the only way the guts can come out." One-piece removal often includes the windpipe, lungs, and heart. This single-piece removal can be facilitated by freeing the windpipe from the neck and pulling it back through from inside the chest cavity, after the diaphragm is cut free. Butchering usually temporarily stops at this point, as participants salvage the edible portions of the intestines and chest organs while still warm.

Butchering the Brisket and the Ribs

In most cases, the next step in the butchering process is removal of the "brisket" or sternum, followed by separation of the ribs from the backbone. Skilled butchers can remove the ribs from the backbone with a knife, cutting through each joint. Others favor the use of a meat saw, or in extreme instances, some use an axe. The backbone is separated forward of the tailbone and again behind the neck. The former task is easily accomplished with a knife while the latter may necessitate use of an axe or saw. It is noteworthy that use of an axe in the butchering process is not destructive to the meat if done correctly. Clean blows of sufficient force with a sharp instrument minimize damage to both the meat and bone.

Using the Head

The head is often saved for the tongue, nose, and lower jaw. The meat on the head is used for making moosehead soup and, at times, the brain, containing a softening enzyme, is utilized in making a soaking solution for skin intended for tanned use. In some instances, only the tongue and nose are removed and the remainder of the head (with antlers removed) is boiled whole and fed to dogs, skin and all. Ingested moose hair is locally reported effective in reducing the degree of intestinal worm infestation in dogs.

Butchering an Animal that has Fallen in the Water

Butchering is necessarily complicated when the animal falls into water. In situations where the animal must be butchered in a lake or river, the animal is generally reduced to the largest movable pieces (sometimes only halved) which can be dragged ashore for further cutting. In these instances, as much skin as possible is left intact to minimize contamination by sand.

Preserving the Meat in the Summer or Fall

Interim methods for preservation of meat in the field in summer or fall vary and are determined, in part, by weather and hunting party plans. Because of the extra weight associated with fresh meat, some hunters hang the meat from a makeshift rack for at least one night to facilitate some drying and to inhibit spoilage.
Alder or cottonwood smoke is used sometimes both for added flavor and to inhibit insect infestation. During periods of wet weather, this practice is even more desirable. The temporary platform is covered with a waterproof tarpaulin or, at least, a layer of brush. While the hanging of meat most often occurs near the river, at times this is done near the kill site, especially if the moose was dispatched more than one-half mile from the boat. Again, weight reduction is a key factor. In situations where the party intends to continue the hunt elsewhere, often the meat is left hanging for longer periods of time either along the river near the point of dispatch or at a central staging area such as the confluence of two rivers.

Preparing to Pack the Meat

Hunters generally prefer to avoid making too many small pieces of meat and even the largest arm or leg can be carried intact for short distances. However, depending on the size of the moose and the distance from the river, the meat may be butchered more extensively at the kill site to facilitate "packing." The size and weight of the front legs can be reduced by removing the lower portion at the knee and by separating the remaining upper portion into two or more pieces.

Similarly, the ribs can be cut into smaller sections as can the backbone and tailbone. Antlers can be removed from the head to reduce the weight of this component. Field boning of the meat is not practiced among Nikolai and Telida hunters, probably because of the desire of residents to use bones and attached meat as central ingredients in making soup. Occasionally meat is removed from the neck bone.

Packing Out the Meat

"Packing" or carrying the meat more than a few hundred feet is undertaken in several ways. During planned hunting activities, pack boards or large external frame back packs are commonly used as the meat is either tied on or placed inside the pack. Among adult men, these loads sometimes weigh 100 pounds or more, as participants attempt to minimize the number of trips to and from the kill site. In the absence of a back pack as is often the case in incidental harvest situations, large portions of meat (such as a leg) are balanced on the shoulder of raincoat-clad hunters. Regardless of the method employed, Elderly hunters encourage at least one of the packers to carry a rifle in a "ready" position should the scent of blood attract predators that might mistake the carrier for a wounded animal.

Preserving Fresh Meat by Drying

Another common method of preserving moose meat was to make "dry meat." Still a contemporary practice among many area residents, this preservation technique is discussed in greater detail later in this chapter. In addition to the immediate problem of preserving fresh meat, making dry meat also appreciably reduced the weight of the harvest through evaporation of the moisture content, thereby facilitating transportation.
Eating the Meat

While large pieces of meat can be preserved for short periods of time through the hanging/smoking process, eventual spoilage is a real possibility, especially during periods of hot or moist weather. Consequently, the meat is consumed as rapidly as possible, when freezing is not an option. In those rare instances when spoilage does occur, the bad meat usually is cooked for dogs.

Activity 1 – Traditional uses of a Moose

1. Brainstorm uses of a moose and make a list of all the uses students come up with. For example: meat for food, bladder for bags, tanned hide for clothing and babiche for sleds and snowshoes, etc.

2. Discuss these topics:
   - Processing moose meat after kill
   - Keeping meat clean
   - Hanging and Partial drying
   - Cutting parts
   - Packing out meat

3. Have older students record information notes in learning logs and younger students draw pictures about the process sequence.

Activity 2 – Elder(s) Sharing on Uses of a Moose

1. Invite an Elder or group of Elders to share about traditional uses of a moose, moose parts, field butchering, and packing out meat.

2. Prepare students beforehand to receive the Elder(s) by reviewing active listening points, communication points, and preferring of Elders points from Lesson One.

3. Brainstorm with students questions to ask the Elder(s) and make a list of questions on chart paper. Older students can to copy list in the learning logs.
   - Explain the parts of a moose
   - Traditional uses of a moose
   - Butchering process after kill
   - Discuss field butchering problems
   - Discuss meat preservation
   - Packing out the meat

4. Introduce and welcome the Elder(s) to the class and give the Elder(s) liberty to share on uses of a moose, moose parts, field butchering of kill, and packing out meat.
5. At the appropriate time, students can ask additional questions and older students can record the answers to questions in their learning logs.

6. Have a review and discussion with the class about what the Elder shared and letting several students retell some of the Elder’s stories.

7. Have older students record notes on hunting traditions shared by the Elder(s) and younger students draw pictures.

**Activity 3 – Go Hunting!**

1. Have the Elder(s) explain the parts of a moose, identification of a bull, and how and where to inflict the wound that kills. (Following information comes from the Alaska Department of Fish and Game; there is also a diagram of moose anatomy with Upper Kuskokwim names in the appendix.)
Antler Size
Source of Information: Alaska Department of Fish and Game, (Hunt Alaska)

- A brow tine emerges from the first branch or brow palm on the main beam of a moose antler projecting forward; the brow palm is separated from the main palm by a wide bay; a tine originating in or after this bay is not a brow tine. (Figure 1)
- To accurately identify and count brow tines, bulls must be viewed from the front; viewing from the side runs a risk of counting main palm points as brow tines. (Figure 1 and 2)
- A point or tine is an antler projection at least one inch long, and longer than it is wide, with the width measured one inch or more from the tip. (Figure 3).
- To better understand the spike-fork 50-inch antler restriction, purchase the video, "Is this Moose Legal?" from the Alaska Department of Fish & Game. Some hunts require viewing of this video prior to hunting.
Vital Zones

Here are some facts you should know about the relative size of the vital zones of a large game animal such as a caribou or moose.

1. The spinal cord passes through the spine, about the diameter of a soda pop can.
2. The major arteries in the neck and body are about the diameter of a human adult’s little finger.
3. The brain is about the size of a baseball and is encased in bone, about ¾ of an inch thick.
4. The heart-lung vital area is about the size of a basketball.

Given this information, where would be the best shot placement?

The correct answer is the heart-lung vital zone. Any other shot has too great a chance to wound the animal. There are a lot of stories about the spectacular result of head and neck shots. Some hunters have said, “Either you kill them instantly or you miss cleanly when you aim for the brain.” This is absolutely false! Wildlife managers and hunters have found many animals with a nose or jaw missing from attempted brain shots. A neck shot may hit the esophagus or trachea, leaving the animal to run away, leave no blood trail, and die a slow death.

Source of Information: Alaska Department of Fish and Game: (Hunt Alaska) p.29-30, 45
Heart & Double Lung Shot

The best shot placement is when the animal is broadside to the hunter or slightly facing away. A heart-lung shot from either position will likely puncture both lungs with the following advantages:

1. When an animal is hit in the heart/lung area, a quick death is certain because an animal cannot function with a loss of both lungs and heart. If the bullet exits, the animal will probably leave a visible blood trail.
2. The heart-lung area is likely to remain stationary. Because an animal’s head and neck frequently move it more difficult to accurately place a shot in those areas.
3. A heart-lung shot minimizes a loss of meat if the bullet enters and exits through the ribs.

Source of Information: Alaska Department of Fish and Game, (Hunt Alaska)

Where should the crosshairs be located for a double lung shot?

On a broadside shot, place the horizontal crosshairs about 1/3 of the distance from the bottom of the chest to the top of the back. Place the vertical crosshair directly behind the near side front leg.

On the quartering away shot place the vertical crosshair on the opposite side front leg and the horizontal crosshair one-third of the way up from the bottom of the chest.

Where Will That Bullet Go?

Let’s say that you are shooting a rifle that sends a pointed 150- to 250-grain bullet down range at between 2600 and 3000 feet per second velocity. This example would include a 7mm Magnum with 175-grain bullet, a .308 with 180-grain bullet, a .30-06 with 180-grain bullet, a .300 Winchester Magnum® with 180-grain bullet, or a .338 Winchester Magnum® with 225- or 250-grain bullet. All of these are popular choices with Alaskan hunters. You have sighted in this rifle to hit between 2½ to 3 inches high at 100 yards. Based on the above information can you answer the following questions?
1. If you place the crosshairs on a target at 200 yards, will your bullet strike above or below the point of aim? How far?

Answer:
At these velocities the bullets will strike on the crosshairs (the point of aim) or 1 to 3 inches above the crosshairs.

2. If you place the crosshairs on a target at 300 yards, will your bullet strike above or below the point of aim? How far?

Answer:
The bullet will strike 4 to 10 inches below the crosshairs.

3. If the wind is blowing from your right at 10 m.p.h. (a very light breeze) and the target is 200 yards away, how far from the point of aim will your bullet strike?

Answer:
The bullet will strike 4 to 6 inches to the left of the point of aim.

4. If the wind is blowing from your left at 20 m.p.h. and the target is 300 yards away, how far from the point of aim will your bullet strike?

Answer:
The bullet will strike 10 to 14 inches to the right of the point of aim.

1. Go hunting with an Elder or other experienced hunter. Hopefully the hunt will be successful. If so, then observe how they treat the moose and the environment when there has been a kill.

Activity 4 – Butchering a Moose

1. Find volunteers among the village hunting parties who will allow students to observe and participate in the butchering of freshly killed moose.

2. Have students work with an experienced moose butcher to observe the process and gain hands-on training.
   - Head and skin
   - Salvaging the intestines and the organs
   - Brisket and the ribs
   - Salvaging the heart, the kidneys and liver
3. Have older students record experience in their learning logs and younger students draw picture description of process.


**Activity 5 – Tanning Moose Hide**

*(Note: This is a good activity if you can obtain a fresh moose hide from the hunt and have experienced Elder(s)/community members who have worked with fresh moose hide preparation, tanning and making babiche.)*

A good reference is “Tanning Moosehide and Making Babish & Rawmane” by Anna Mae Osip. This booklet prepared for Tanana Chiefs Conference, Inc. written for the Tanana Survival School (1974) by the Anchorage Community College’s Adult Literacy Laboratory.

1. Invite Elder(s) or community member(s) who are experienced in fresh moose hide preparation, tanning and making of babiche (babish), and making jerky to work and share with students.

2. Have the experienced Elders/community members demonstrate tools they use and how to make tools in the traditional style for moose hide preparation.
   - Flesher tool
   - Blunt scraper
   - Sharp knife
   - Scribing board
   - Large sticks for twisting wet moosehide
   - Cutter
   - Smokehouse frame
   - Babiche/Rawmane drying frame

3. Have the experienced Elders/community members talk about the uses for moose hide and babiche and show examples of items made with tanned moose hide and babiche.

4. As soon as a fresh moose hide from the moose hunt is available, have students do hands on activity with preparation of the moose hide with the guidance of experienced Elders/community members.

5. With the guidance of experienced Elders/community members, complete the tanning of the moose hide and make a portion of the moose hide into babiche.

6. Review and discuss the process after completing the activity. Have older students record what they learned in their learning logs.
7. Make a senses chart about this activity about the seeing, hearing, and touching experienced in this activity.

**Activity 6 – Moose Use in Games**

As the students learned in the first lesson, Alaska Native games helped develop strength and skills for hunting. Below is a game played with moose hide, another moose use from the Alaska Native Knowledge Network, Alaska Native Games: A Resource Guide. [http://www.ankn.uaf.edu/curriculum/NativeGames/games.htm](http://www.ankn.uaf.edu/curriculum/NativeGames/games.htm)

**Moose Skin Drag Game:** Materials- Piece of moose skin. Sharpened stick for each of the players. Players- Two to eight. Procedures- Boys try their skill at dragging a moose skin along the ground while their cohorts chase after them with sharpened sticks trying to pin the skin to the ground, thus stopping the one who pulls it. If the boy pulling the skin gets away, he is considered very smart.

**Activity 7 – Moose Cookbook**

1. Have a class discussion about their favorite ways to eat moose meat.
2. Have Elder(s) teach students the preparation and drying process for making jerky.
3. Have students interview family, Elders, neighbors about the different ways they prepare moose meat.
4. Have students write the information down that they received as moose recipes.
5. Have students look in special Alaskan cookbooks and on the internet for unusual recipes for moose that they have never tried but sound interesting.
6. Have students make a cookbook containing recipes and design their own cover and bind recipes together.
Lesson Five – Importance of Moose

Objectives:

- Students will develop respectful interaction with Elders through active listening and proper communication.
- Older students will develop skill in note taking in their learning logs.
- Younger students will develop in drawing picture representation and pictures in sequencing to demonstrate what they have learned.
- Students will retell what is shared with them in class discussions.
- Students will learn traditional values.
- Students will understand the importance of moose in cultural values.
- Students will be able to speak about how moose can demonstrate culture values.
- Students complete summary project.

Resources and Materials:

- Upper Kuskokwim Athabascan Elder(s)
- Chart paper, markers
- Learning logs
- Art materials for younger students
- Athabascan Traditional Values Chart
- Moose meat
- Moose recipes
Skillful Hunters Provided Food for the Village

Traditionally, skillful hunters were recognized as providers by the community, and consequently their obligation voluntarily went beyond members of the immediate or extended family. While the status once associated with the productive mastery of hunting skills and the sense of community have diminished somewhat in recent years, the pattern or process of sharing from earlier times is still evident in Nikolai and Telida today.

Who Receives the Moose Meat in the Village

A substantial part of the annual moose harvest is subject to sharing with members of other households. Three levels or tiers of distribution have been noted in Nikolai and Telida. Self-retention of the harvest is considered as level one. Self-retention is the initial division of meat among all participants of a particular hunt. The second level, or primary distribution, entails a sharing of the harvest among households or individuals not engaged in the taking of a particular moose. The third level and most far-reaching is secondary distribution, occurring when primary recipients redistribute a portion of their share to others within or outside the community.

Ceremonial Use of Moose Meat

Ceremonial use of meat at "potlatches" held for Russian Orthodox holidays, baptisms, funerals, and other occasions falls within the secondary distribution level. Both primary and secondary distribution takes place in either selective or community-wide contexts. In any event, the hunter usually retains the largest share.

Giving and Taking Moose Meat

Distribution of the harvest in excess to that amount the hunter and his household was able to consume minimized culturally unacceptable waste. The practice of reciprocity is one other factor worth considering in understanding the continuing distribution patterns of moose meat. Other hunters at other times will prove successful and share their harvest with those who previously demonstrated their generosity.
In Telida, the practice of pooling resources to engage in hunting efforts combined with the small population make primary distribution a nearly universal practice throughout the year.

**Sharing Moose Meat among Communities**

Inter-community sharing of moose is evident between Nikolai and Telida inhabitants. On several occasions over the previous ten years, some older Nikolai hunters have traveled to Telida and assisted community residents, to whom they are typically closely related in obtaining one or more moose. Because there are comparatively few households in Telida, equipment failure and periods of resource scarcity can have major implications in this relatively isolated community. The close cultural and kinship ties between the two communities contribute to reinforcing this type of sharing.

**Exchanging Moose Meat for Fish Meat among the Communities**

In addition, some Nikolai residents sometimes send small amounts of meat to their Telida relatives. This inter-community exchange of resources may be reciprocated at other times of the year as Telida inhabitants occasionally send resources characteristic of their area, such as whitefish, to friends and relatives in Nikolai.

**Activity 1 – Cultural Values and the Moose**

1. Present the Athabascan Cultural Values Chart in the appendix to the students.

2. Discuss the importance of moose in demonstrating cultural values. Make a list on chart paper all the student comments.

3. Discuss:
   - Sharing of the extra moose meat
   - Ceremonial use of moose meat
   - Sharing with other communities
   - Exchanging moose meat for other meat, etc.

4. Add new information from reading about the importance of Moose in demonstrating cultural values.

5. Have older students record information in their learning logs and younger students draw a picture of using Moose to demonstrate a cultural value.

6. Review and discuss: “Athabascan Values: ● Self-sufficiency ● Hard work ● Care and provision ● Family relations ● Unity ● Humor ● Honesty ● Fairness ● Love for Children ● Sharing ● Caring ● Village-cooperation ● Responsibility to...
the Village ● Respect for Elders ● Respect for knowledge ● Wisdom from life experiences ● Respect for the land ● Respect for nature ● Practice of Traditions ● Honor ancestors

Activity 2 – Elder(s) Sharing on the Importance of Moose in Cultural Values

1. Invite an Elder or group of Elders to share about traditional importance of moose in demonstration of cultural values.

2. Prepare students beforehand to receive the Elder(s) by reviewing active listening points, communication points, and preferring of Elders points from Lesson One.

3. Brainstorm with students questions to ask the Elder(s) and make a list of questions on chart paper. Older students can copy the list in the learning logs.
   ● Cultural values in relation to the moose: sharing, non-wasting, respect.
   ● Importance of moose to our traditional way of life and modern day life.
   ● Uses that are no longer practiced. Why are they no longer practiced?
   ● Learn ceremonial uses of moose meat.

4. Introduce and welcome the Elder(s) to the class and give the Elder(s) liberty to share on traditional importance of moose in demonstration cultural values.

5. At the appropriate time, students can ask additional questions and older students can record the answers to questions in their learning logs.

Activity 3 – Elders and Experienced Hunters Luncheon

1. Have class design an invitation to send out to all of the people who helped with this moose unit.

2. Send the invitations.

3. Prepare some of the moose from traditional recipes and a couple of dishes of unusual moose recipes.

4. Have students make gifts for the Elder(s) and volunteers.

5. When the Elders and volunteers arrive, let the students serve them.

Activity 4 – End of Unit project.

1. Have the older students write a short report about the unit and include all the extra material in their project file. They can use the notes from their learning logs to help them write the report.
2. Have the younger students design a cover for unit booklet and put their picture summaries in order and include all their project material. Fasten booklet together with cover on top.

3. Have a class discussion about the Moose Unit for input on the process of the unit. Make a list of the student’s comments.
   - What did you like the best?
   - What did you like the least?
   - What was the most difficult part of the unit?
   - Do you feel like you learned a lot about moose?

4. Make an evaluation chart based on the student answers.