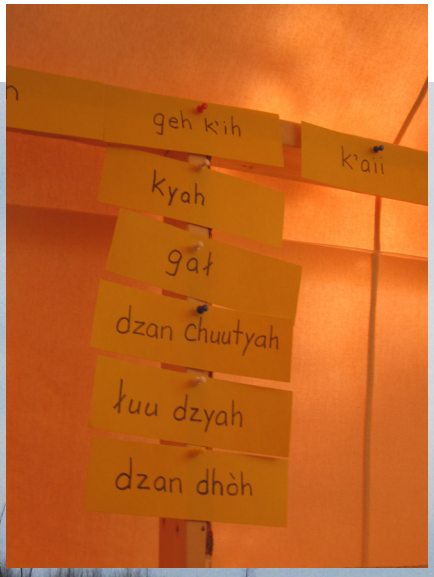
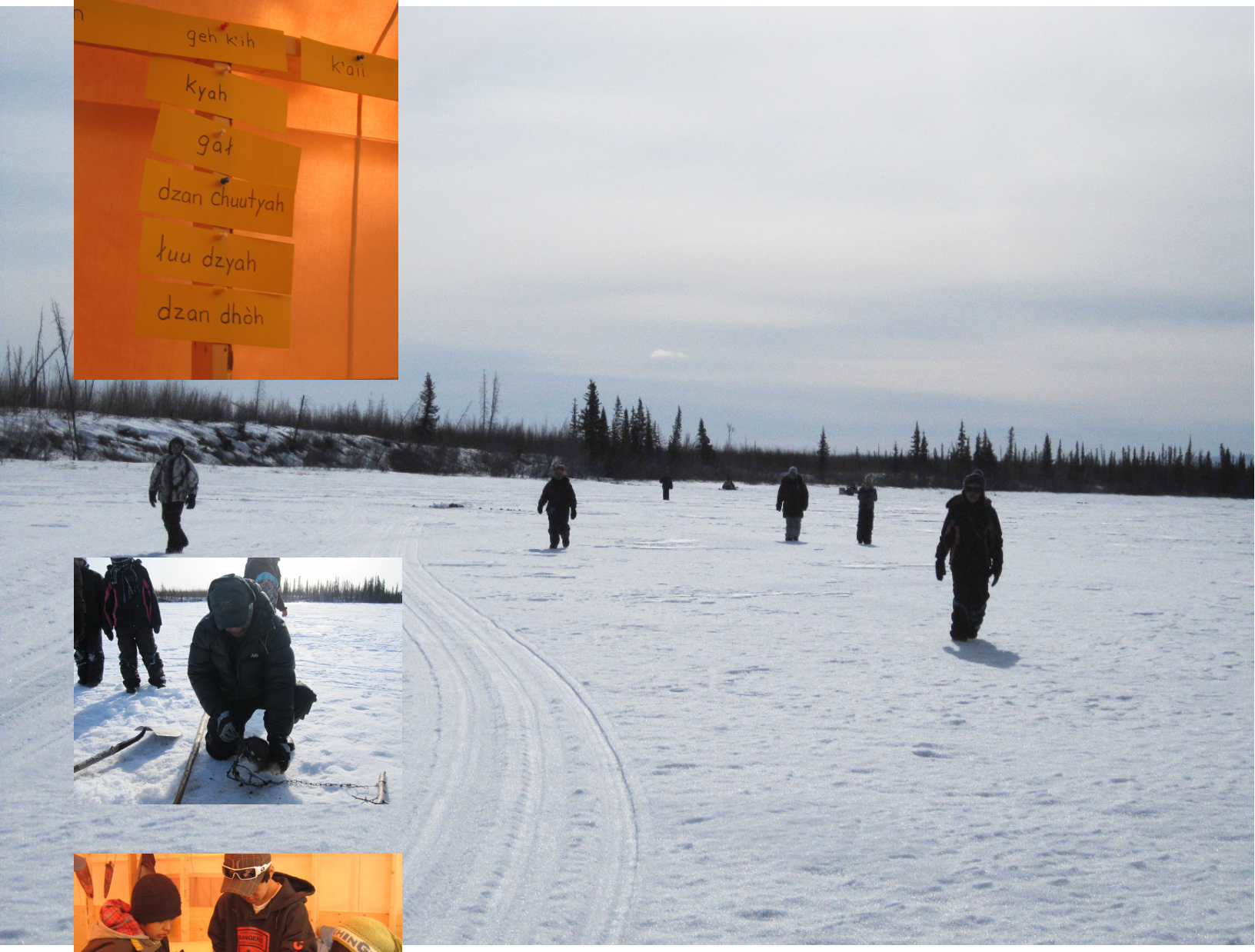
Traditions & Science
Teacher Manual





Spring Culture Camp
Chief Zzeh Gittlit School
Vuntut Gwitchin First Nation & Yukon Territorial Government
Northern Strategy
Developed: Spring 2010

Learning For Life

Yeendoo Tthak Gi'k'atr'anjii

Land-Based Experimental Learning
Jii Nanh Vakak Nits'oo Gwiidan Daii Gik'atr'anji

Vuntut Gwitchin Government & Yukon Education
Traditions & Science- Spring Culture Camp Teacher Manual
First Published 2010

Written & Compiled by: Kerri Ceretzke
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Old Crow Experiential Education Project resources were developed with input and guidance from Vuntut Gwitchin members, Elders and resource workers in Old Crow, Yukon, Canada. The resources and lessons are specific and relevant to the traditional and cultural activities of the Vuntut Gwitchin First Nation people. It is recommended that organizations and individuals interested in using these materials reflect on their community and youth needs, and create their own materials for their own community's traditions and culture under the guidance of Elders, community members and resource workers.

Director of Education
Vuntut Gwitchin Government
PO Box 94
Old Crow, YT Y0B 1N0
(867) 966-3261

Logo Image: Clifton Nukon

Yukon
Government

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Teacher Expectations

Pre-Camp

- Read and understand grade level Culture Camp lesson plans.
- Order, gather and pack teacher-guided lesson materials and supplies.
- Assist Educational Support Worker with the distribution and gathering of permission slips and medical forms.
- Pre-Camp activities with students (see the chart on the next page).

Camp

- Live and learn at the camp with your students.
- Teach academic lessons at the camp (lessons in this manual).
- Supervise students and assist camp workers as needed.
- Ensure students are completing their guidebooks.
- Clean and pack up lesson materials and supplies.

Post-Camp

- Post-Camp activities with students (see guidebooks).
- Assist or lead with the development of the *PushUp Press* (camp magazine).
- Assist with the closing community camp celebration supper & slideshow.
- Assess students with Educational Support Worker with given rubrics.
- Give feedback in student guidebooks. Mark assignments.
- Assess students based on guidebook rubrics.

Pre-Camp and Post-Camp Student & Teacher Activities

Grade Level	Pre-Camp Student Activities	Post-Camp Student Activities
1 - 3	- Fill in *Your Schedule* - Read '*Camp Guidelines & Safety*' - Read '*Packing*'	- Complete any unfinished activities - Share written & oral stories to the organizer of the *PushUp Press*
4 - 6	- Fill in *Your Schedule*. - Read '*Camp Guidelines & Safety*' & complete activity - Complete 'Setting Goals' - Read '*Packing*' & complete packing activity - Read '*Recording History*' & emphasize camera care	- Complete any unfinished activities - Complete '*Setting Goals*' reflection - Download & label pictures onto computer - Share written & oral stories to the organizer of the *PushUp Press*
7 - 9	- Fill in *Your Schedule*. - Read '*Camp Guidelines & Safety*' & complete activity - Complete '*Setting Goals*' - Read '*Packing*' & complete packing activity - Read '*Recording History*' & emphasize camera care	- Complete any unfinished activities - Complete '*Setting Goals*' reflection - Download & label pictures onto computer - Share written & oral stories to the organizer of the *PushUp Press*

Culture Camp
Fish Lake, YT
– Spring 2010

Grades 7-9 Lessons

Things are going to keep on growing and changing, keep growing and changing with it.
– Alfred Charlie

Teacher Notes....

Traditional Activity

Leadership

Chief & Council – Becoming a Leader

To give students an opportunity to develop problem solving skills that are practiced, carried out and reflected upon an authentic situation (camp). To develop public speaking skills in small and large group situations. To understand leaders seek advice for decision making by asking others and having strong listening skills.

Learning Outcomes

Health 7

A1 Design a plan to achieve a specific goal

A2 Demonstrate an ability to apply a decision-making model to a specific situation

B2 Identify skills that are transferable to a range of school and recreational situations (e.g., time management, teamwork, problem solving, communication, adaptability)

Health 9

Identify skills that are transferable to new tasks and situations within and outside the school, including: personal management skills, academic skills and teamwork skills

Materials

- Student Booklet
- Draw Bag
- Slips of Paper
- Pencils
- Furs (trading post) For A Job Well Done!
- 'Today's Chief is ___ Today's Council is___' Poster

Procedure

1. On the first day of camp work through pages 16 to 19. Start by having a student read the top of page 16 then as a group work through the questions on page 16.

   What are other knowledge and skills that the Chief & Council members require?
   Planning skills – short & long term, motivated, supportive, open minded, strong, energetic, visionary, decision maker, etc.

   Who can the Chief & Council go to for advice and guidance?
   Elders, community members, staff, other First Nation Gov't, etc.

   Where can the Chief & Council members go for more training or education?
   School (university, college, etc.), Workshops

2. On page 17 students (on their own or with a partner) fill in the graphic organizer. Students are to reflect on themselves and how to make certain skills stronger. Once students are finished share ideas so students can add to their list.
3. Have the students read through page 18. Twice if needed.
4. Look at the problem solving process on page 19. Have the students analyze the cycle. Does this cycle make senses? Share stories on how you or another person used this cycle to solve a problem.
5. On the bottom of page 19, students will solve the problem using this cycle.

Everyday – Chief & Council Draw:

6. Write each of the students' names on a slip of paper. Draw for one Chief and two Council members.
7. Students are expected to solve the problems of the day (For example: garbage, not listening, being late, etc.) Serious problems will be dealt with by the teacher and camp staff.
8. If the students go a great job they can be paid with the trading post furs.
9. A new Chief & Council will be drawn the next day.

Guidebook Assessment

Student Booklet Pages 16 - 19

Traditional Activity

Trapping Muskrats

Tally Charts, Graphing, Central Tendency and Range

To understand trapping trends and healthy populations using various math techniques; therefore, being able to draw conclusions and solve problems.

Learning Outcomes

Math 7

B1 Demonstrate an understanding of oral and written patterns and their equivalent linear relations

B2 Create a table of values from a linear relation, graph the table of values, and analyze the graph to draw conclusions and solve problems

D1 Demonstrate an understanding of central tendency and range by determining the measures of central tendency (mean, median, mode) and range determining the most appropriate measures of central tendency to report findings

D2 Determine the effect on the mean, median, and mode when an outlier is included in a data set

Math 8

D1 Critique ways in which data is presented

Math 9

B2 Graph linear relations, analyse the graph, and interpolate or extrapolate to solve problems

D1 Describe the effect of bias, use of language, ethics, cost, time and timing, privacy and cultural sensitivity on the collection of data

Materials

Flip Charts
Felt Markers
Booklet
Rulers
Calculator

Procedure

Part A: Tally Charts & Graphing

1. Assist with setting traps, checking traps and skinning muskrats

2. With the students set up a tally chart on the large flip paper to record the number of muskrats caught daily. Post grades in teaching tent. Dates need to run until the end of Culture Camp for all students (grades 4 - 6 and grades 1 - 3 students will continue keeping track).

   Students will fill in daily.

Day	# of Muskrats Trapped	# of Traps Set	Success Fraction	Success Decimal	Success Percent
1					
2					
3					
4					
5					
6					

3. On the last day of camp have the students determine success fraction, decimal and percent.
4. On page 37 students will graph the muskrat data in line graph form. Ensure they review the graphing components below:
   - Title
   - X-axis & Y-axis labeled
   - Proper "Number of Muskrats" scale
   - Proper date scale
   - Straight lines
5. On page 38 students will:
   - Describe the trend of the data (increasing daily, decreasing daily and remaining the same) and why these trends occur.
   - Extrapolate (predict) the next week on their tally charts and then graph the information in a different colour.
   - Describe any errors (inaccurate information).

Part B: Central Tendency & Range

1. At the end of camp (once the muskrat numbers have been determined), have students fill in the information (re: central tendency and range) in their booklet on page 39.

Background Information:

The MEAN is the arithmetic average, the average that you are probably used to finding for a set of numbers. Add up the numbers and divide by how many there are:
(80 + 90 + 90 + 100 + 85 + 90) / 6 = 89 1/6.

The MEDIAN is the number in the middle. In order to find the median, you have to put the values in order from lowest to highest, then find the number that is exactly in the middle:
80 85 90 90 90 100

Since there is an even number of values, the MEDIAN is between these two, or it is 90. Notice that there is exactly the same number of values ABOVE the median as BELOW it!

The MODE is the value that occurs most often. In this case, since there are 3 90s, the mode is 90. A set of data can have more than one mode.

The RANGE is the difference between the lowest and highest values. In this case 100 - 80 = 20, so the range is 20. The range tells you something about how spread out the data is. Data with large ranges tend to be more spread out.

Source: mathforum.org

Guidebook Assessment
Tally Chart
Graph & Extrapolate
Trends & Errors
Central Tendency & Range

Clifton working on his grade 7-9 Traditions & Science Guidebook. The Guidebook is integral in recording traditional and academic information along with learning proper scientific terminology and the Gwich'in language. Students use the guidebook at every activity.

Teacher Notes....

Traditional Activity
Trapping Muskrats

Interviewing and Past & Present Income Calculations

To practice interviewing skills and recording information with the goal of comparing and contrasting the past and present. To practice math skills and to understand income and central tendencies.

Learning Outcomes

Language Arts 7
A1 Use speaking and listening to interact with others for the purposes of contributing to a class goal, exchanging ideas on the topic, making connections & completing tasks

A3 Listen critically to understand and analyse ideas and information

A9 Use speaking and listening to improve and extend thinking

Language Arts 8
A1 Interact and collaborate in pairs and groups to support the learning of self and others; explore experiences, ideas, and information; understand the perspectives of others

A5 Select and use a range of strategies to prepare oral communications

A10 Speak and listen to synthesize and extend thinking

Language Arts 9
A1 Interact and collaborate in pairs and groups to support the learning of self and others; explore experiences, ideas, and information; understand the perspectives of others

A5 Select and use a range of strategies to prepare oral communications

Math 7
A2 Demonstrate an understanding of the addition, subtraction, multiplication, and division of decimals (for more than 1-digit divisors or 2-digit multipliers, the use of technology is expected) to solve problems

Math 8
A4 Demonstrate an understanding of ratio and rate

Materials

Calculator (optional)
Booklet

Procedure

Muskrat Trapping & Incomes from the Past

1. Discuss or interview a community member or Elder on how many muskrats a person would trap in the past. Use pages 26 to 27 to record the information.
2. Have the students write their historical information into their booklet, including….
   - What did they trap? Muskrats!
   - Who (person or family) was trapping?
   - Where did they trap?
   - When (season, time of day) did they trap?
   - Why did they trap?
   - How did they trap?
   - How much did muskrats sell for??

Compare & Contrast Muskrat Incomes

Contact the Hunters & Trappers Association or the Vuntut Gwitchin Government – Natural Resources Department on current muskrat prices (range is $6 to $12/fur).

1. At the end of the camp have students calculate their income for the week's worth of muskrat trapping. Use pages 40 & 41 of the student booklet to help you.

Date: (NOW)

# of muskrats x $_____ / muskrat = total income

Example:
20 x $10/muskrat = $200
Date: (Year from Interview)
# of muskrats x $_____/muskrat = total income

Example:
210 x $2/muskrat = $420

2. Have students answer the following:
   How long could a person support themselves on the NOW income?
   On the PAST income?

   Prediction:

   How many muskrats would a person have to catch daily to take care of themselves? For a family of four?
3. Check the calculations & provide answers to the questions. Do they seem reasonable?

Guidebook Assessment
Interview Information
Income Calculations
Critical Thinking Questions
Traditions & Science Page 15

If the students know the activities (guidebook questions) prior to traditional activities or camp (or carry the guidebook with them), these interviews can happen at the muskrat pushup.

Excellent discussions in a beautiful setting.

Teacher Notes....

Traditional Activity

Trapping Muskrats

Muskrat Dissections, Microscopes & Scientific Drawings

To learn proper dissection techniques and to understand bodily systems in English and Gwich'in. To learn how a microscope works and practice drawing and sketching based on these magnified images.

Learning Outcomes

Science 7

Assess survival needs and interactions between organisms and the environment
Assess the requirements for sustaining healthy local ecosystems

Science 8

A1 Demonstrate safe procedures

A2 Perform experiments using the scientific method

A6 Demonstrate ethical, responsible, cooperative behaviour

A7 Describe the relationship between scientific principles and technology

B3 Explain the relationship between cells, tissues, organs, and organ systems

Science 9

A1 Demonstrate safe procedures

A2 Perform experiments using the scientific method

A5 Demonstrate ethical, responsible, cooperative behaviour

Materials

Dissection Kits
Microscope
Muskrat Systems Guide
Wax Tray
Microscope Slides
Guidebook

Procedure

1. Assist as needed with setting traps, checking traps and skinning muskrats.
2. Discuss with the students the ethical issues of using animals in a dissection. Discuss the differences of animal dissection of rural vs. urban.

DISSECTION:

3. Using pages 28 & 29 teach students dissecting tools and microscope parts. Teach proper carrying and care of the microscope.
4. Review parts of the microscope (see guidebook).
5. Pin muskrat belly side up in the wax tray.
6. The students will carefully make a cut from middle lower throat downwards (middle) towards the anus. Student may cut the ribcage as well with scissors.
7. Students will identify muskrat parts & body systems in English & Gwich'in on pages 30 & 31. Parts will be labeled in both languages in their guidebooks.

Main systems to identify:

- circulatory (heart, major blood vessels)
- respiratory (lungs, trachea, bronchi, pulmonary arteries, pulmonary veins)
- digestive (mouth, teeth, esophagus, stomach, pancreas, small intestine, large intestine, rectum, anus)
- reproductive (testis, uterus)
- excretory (kidneys, bladder, urethras)

FOCUS ORGAN – STOMACH

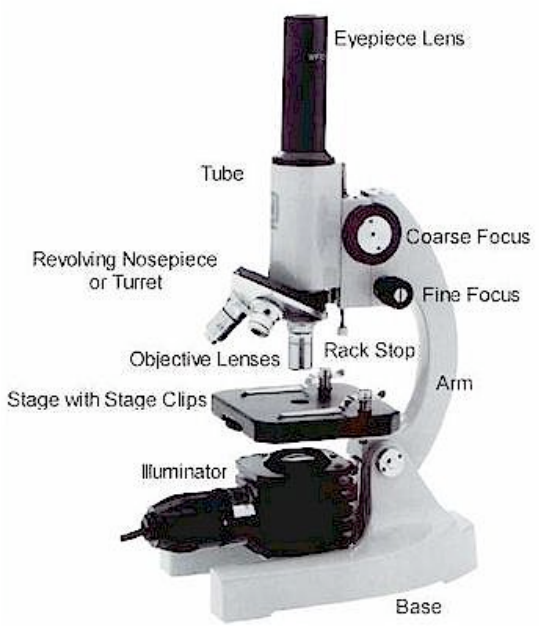
8. Page 32 of the student booklet focuses on the muskrat's stomach. Have students cut the stomach out at the base of the trachea and the top of the stomach.
9. Students will cut open the stomach by cutting laterally revealing the inside of the stomach.
10. Students will answer the questions on page 32. A review of food webs may need to conducted prior to the question #3.

MAKING A WET MOUNT SLIDE & USING THE MICROSCOPE

BACKGROUND

The Microscope

Historians credit the invention of the compound microscope to the Dutch spectacle maker, Zacharias Janssen, around the year 1590. The compound microscope uses lenses and light to enlarge the image and is also called an optical or light microscope. The simplest optical microscope is the magnifying glass and is good to about ten times (10X) magnification. The **compound** microscope has two systems of lenses for greater magnification, 1) the ocular, or eyepiece lens that one looks into and 2) the objective lens, or the lens closest to the object. When using a microscope, it is important to know the functions of each part.



Eyepiece Lens: the lens at the top that you look through. They are usually 10X or 15X power.

Tube: Connects the eyepiece to the objective lenses.

Arm: Supports the tube and connects it to the base.

Base: The bottom of the microscope, used for support.

Illuminator: A steady light source (110 volts) used in place of a mirror. If your microscope has a mirror, it is used to reflect light from an external light source up through the bottom of the stage.

Stage: The flat platform where you place your slides. Stage clips hold the slides in place. If your microscope has a mechanical stage, you will be able to move the slide around by turning two knobs. One moves it left and right, the other moves it up and down.

Revolving Nosepiece or Turret: This is the part that holds two or more objective lenses and can be rotated to easily change power.

Objective Lenses: Usually you will find 3 or 4 objective lenses on a microscope. They almost always consist of 4X, 10X, 40X and 100X powers. When coupled with a 10X (most common) eyepiece lens, we get total magnifications of 40X (4X times 10X), 100X , 400X and 1000X.

Rack Stop: This is an adjustment that determines how close the objective lens can get to the slide. It is set at the factory and keeps students from cranking the high power objective lens down into the slide and breaking things. You would only need to adjust this if you were using very thin slides and you weren't able to focus on the specimen at high power. (Tip: If you are using thin slides and can't focus, rather than adjust the rack stop, place a clear glass slide under the original slide to raise it a bit higher)

Condenser Lens: The purpose of the condenser lens is to focus the light onto the specimen. Condenser lenses are most useful at the highest powers (400X and above). Microscopes with in stage condenser lenses render a sharper image than those with no lens (at 400X).

Diaphragm or Iris: Many microscopes have a rotating disk under the stage. This diaphragm has different sized holes and is used to vary the intensity and size of the cone of light that is projected upward into the slide. There is no set rule regarding which setting to use for a particular power. Rather, the setting is a function of the transparency of the specimen, the degree of contrast you desire and the particular objective lens in use.

How to Focus Your Microscope:

The proper way to focus a microscope is to start with the lowest power objective lens first and while looking from the side, crank the lens down as close to the specimen as possible without touching it. Now, look through the eyepiece lens and **focus upward only** until the image is sharp. If you can't get it in focus, repeat the process again. Once the image is sharp with the low power lens, you should be able to simply click in the next power lens and do minor adjustments with the focus knob. If your microscope has a fine focus adjustment, turning it a bit should be all that's necessary. Continue with subsequent objective lenses and fine focus each time.

SOURCE: microscope-microscope.org/basic/microscope-parts.htm

11. Students can first look at a body part of choice under the microscope. They can practice with low or high magnification, as well as light sources. Body parts – teeth, claw, eyeball, or kidney are great first looks!
12. Have students practice making a wet mount* – use the instructions on page 33 of the student booklet. **Thin** slices of tissue are needed. The thinner slice the greater the chance of seeing individual cells.

SCIENTIFIC SKETCHING

13. Students will focus onto the sample. They can use their first slide or wet mount slide or a new slide.

14. Explain to students total magnification (ocular power x objective power).
15. On pages 34 & 35 students will draw the tissue. Remember those details! Use shading, sharp lines, soft lines, etc. to make those details.

CLEAN UP

16. Wash and disinfect the tools and the wax tray. Dispose of unused animal parts properly and respectfully.

GUIDEBOOK ASSESSMENT

Gwich'in & English Muskrat Parts
Stomach Contents Questions
Scientific Sketches

Milissa & Lance working & learning together in the teaching tent.

Clifton, Trey & April work through a formal dissection together with their classroom teacher. Traditional teacher, Stan Njootli Sr. watches the dissection and assists with the Gwich'in words.

Teacher Notes....

Traditional Activity

Transportation on the Land

Skidoo & Engineering

To realize the science and technology behind designing a skidoo, as well as a basic introduction to engines and its components.

Learning Outcomes

Technology 7
Communicate ideas for designing a product or system using different types of drawings

Technology 8
Explain how systems transmit and convert energy
Identify how simple machines are combined into energy and power systems

Materials

Skidoo
Pencils
Engine Tools (optional)
Student Booklet
Sample Small Engine (optional)

Procedure

1. On page 50 of the student booklet, read through the introduction and have students answer the first question.
2. Then have students take their booklets outside to examine a skidoo.
3. Students will jot down notes on:
   - Safety features (lights, kill/stop switches, windshields, etc.)
   - Comfort features (padding on seat, heated thumb throttle, etc.)
   - Storage features (basket, under the seat, etc.)
   - Making It Look Cool! Features (color, design, logos, etc.)
4. Allow students several minutes to draw a skidoo that they would love to see. Have them label one or more safety, comfort, storage and making it look cool features.
5. Read through page 52: 2 stroke vs. 4 stroke.
6. On page 53 have students compare and contrast 2 stroke and 4 stroke. What makes them the same? What makes them different?
7. Engineers design engines for different purposes (speed, strength, fuel efficiency, climate, etc.). Have students brainstorm why there are various types of motors.

Guidebook Assessment

Skidoo Features
Compare And Contrast 2 & 4 Stroke
Purpose Of Motors

Teacher Notes....

Traditional Value
Hard Work

Traditional Activities, Working Hard & the Science Behind It

To understand that land-based activities can keep a person very fit and strong. To understand way our bodies and muscles react to strenuous activity.

Learning Outcomes

Physical Education 7
A1 Relate the effects of regular participation in a variety of types of physical activities to quality of life

Physical Education 8
A2 Describe health-related components of fitness (muscular strength, muscular endurance, cardiovascular endurance, and flexibility)

Materials

Student booklet
Pencils

Procedure

1. On page 57 have students jot down what activities they participated in at camp (snowshoe, haul in wood, walk, shovel snow, games, etc.).
2. In addition to the activity have students jot down how long they spent doing the activity, as well if they sweated or had weak or sore muscles after the activity.
3. Together read why a person sweats, and has weak or sore muscles.
4. Have students analyze the main muscle diagrams. While using the diagram see if they can figure out the meaning of posterior and anterior.
5. On page 59 students will use the diagram and their experience to determine which muscles they used for their activity.
6. Finally on page 59 students will read the story of Dick Nukon's dad cutting wood and answer the questions.

Guidebook Assessment

Activity Log
Muscle Predictions
Traditional Story

Teacher Notes....

Traditional Activity

Trading Post

Trading Post & Hudson Bay

Students will earn furs by being a positive, contributing culture camp community member to purchase items in the Trading Post. Students will visualize past trading at the Hudson's Bay Trading post as well analyze it's impact on the Gwich'in culture and lifestyle.

Learning Outcomes

Health 7

A1 Design a plan to achieve a specific goal

B2 Identify skills that are transferable to a range of school and recreational situations (e.g., time management, teamwork, problem solving, communication, adaptability)

Health 8 & 9

Identify skills that are transferable to new tasks and situations within and outside the school, including:
personal management skills, academic skills and teamwork skills

Language 8 & 9

A1 Interact and collaborate in pairs and groups to support the learning of self and others; explore experiences, ideas, and information; understand the perspectives of others

Materials

Pencils
People of the Lakes Books
Trading Post Bank
Felt Markers
Student Booklet Pg. 20 – 25
Trading Post Furs
Poster Paper
Items For Trade

Procedure

1. **Overview** – Throughout the camp students are expected to assist in camp duties (for example: hauling wood, dishes, sweeping up, cleaning up their area, etc.) However, if a student goes above and beyond (for example: scrubbing pots for the cook, hauling in snow for the cook, clean up after an activity, etc.) then they have the opportunity to earn a trading post fur. Furs can add up! Students will collect the furs and use them for a trading post activity at the end of camp.

2. On page 20 students will list the chores that need to be completed at camp. Read the bottom of page 20 together.
3. As a group read pages 121 – 127 in *People of the Lakes book* and allow time for students to draw a scene from the stories on page 21 in the student booklet. As well students need to give a concise 6 words or less description of the scene.
4. On page 22 of the student booklet students will answer the questions from Myra Kaye's story.
5. On pages 23 to 25, depending on the grade level, students will answer a grade level question.
6. Emphasize the importance of helping each other out, keeping positive and respectful to maintain a healthy camp community.

Guidebook Assessment

Student Booklet Page 20 to 25

Fur Totals

Traditional Activity

Landscape & Animal Observations

Bearly Any Ice –
Predator/Prey Relationships & Climate Change

To understand predator and prey relationships, and the interconnections between living and non-living. To discuss and understand the effects of climate change of northern species.

Learning Outcomes

Science 7

Analyse the roles of organisms as part of interconnected food webs, populations, communities, and ecosystems

Assess survival needs and interactions between organisms and the environment

Assess the requirements for sustaining healthy local ecosystems

Evaluate human impacts on local ecosystems

Explain how the Earth's surface changes over time

Science 8

D1 Explain the significance of salinity and temperature in the world's oceans

D2 Describe how water and ice shape the landscape

D3 Describe factors that affect productivity and species distribution in aquatic environments

Materials

Pylons
Hula Hoops (rope to create a "hole" on the ice)
Tokens (for example: slips of paper)

Teachers & Grades 7-9 students playing "Barely Any Ice" on Fish Lake.

Procedure

1. **Background**:

The polar bear is an international symbol of the Arctic and is the largest land-based carnivore in the world. Polar bears are culturally and economically important for northern people.

Climate change is already having an impact on polar bears. Warming temperatures are reducing the thickness of sea ice as well as the length of the season in which the bears can use the ice for hunting. Bears depend almost solely on the ringed seal for their food source and hunt them on the sea ice. Polar bears are unable to capture and kill seals in open water.

In the western Hudson Bay, the polar bear's hunting season has been shortened by three weeks over the last 20 years due to earlier ice melts. This is having a drastic impact on the bears. Bears are showing higher cub mortality, reduced weights, and reduced fat stores. During the summer, when food sources are almost nonexistent, bears have survived by using the fat stores that they have built up during the winter. Now, however, many communities are struggling with hungry bears wandering into their towns and creating hazards for humans. The reduction of sea ice could lead to the extirpation of polar bears in much of their southern range and possible extinction of the bears.

2. Have students have a look at the following table in their booklet:

Bearly Any Ice Data Chart

Year	# of Rounds in Year	# of Hula Hoops	# of Adult Polar Bears at Beginning of Round	# of Surviving Adult Polar Bears	# of Cubs at beginning of round	# of Surviving Cubs	# of Cubs Born	# of Seals at Beginning of Round	# of Seals at End of Round
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

3. Identify students as either polar bears or ringed seals. About two thirds of the students can be seals and one third can be polar bears. Polar bears can wear gym vests or other identifying markers.
4. Each seal is given 10 food tokens to represent the seals caught by the polar bears.
5. In a playing field, use the traffic cones to identify the ends as safety zones for the seals.
6. Place four hula hoops in the open area. The hula hoops represent areas of open water that are temporary safety zones for the seals.
7. Record the number of seals and polar bears at the beginning and end of each round on the data chart.
8. Begin the game with all the seals starting at one end of the playing field and all the polar bears scattered around the playing field. The seals will try to run to the other end of the playing field without being tagged by the polar bears.

   The seals can use hula hoops as temporary safety zones from the polar bears for a maximum of five seconds before they need to move on.

When a seal is tagged, they must give one of their tokens to the bear. A seal must not be tagged twice in a row by the same bear. Once a seal runs out of tokens, they are considered to have lost their life and they must move over to the side of the playing field. After all the living seals have made their way to the other end of the playing field, the leader signals for the seals to run back to the other end using a whistle blast.

One round of the game runs six lengths of the gym or field. That equals one season of hunting for the polar bears.

9. At the end of a round, the polar bears are to count the number of tokens collected.

In order for a polar bear to survive the season, at least four tokens must have been collected. Deceased polar bears become seals during the next round. Polar bears that collect seven or more tokens have found enough food to reproduce. Reproducing bears select one of the dead seals (or a live seal if there are no dead seals to be had) to be their cub. The cubs will not be able to hunt during their first two seasons.

They will have to follow close behind their mother and hope that enough seals are caught for them both to survive. A mother will need to catch a total of six tokens to ensure that she and her cub survive the season.

Record the number of polar bears and seals that survived as well as the number of cubs born at the end of each round or season.

10. At the beginning of the each round, replenish the seals' tokens to a total of ten tokens by collecting the tokens from the polar bears. All students get back in the game and are involved at the beginning of each round.
11. Repeat the game again as played before. Remind the cub polar bears that they are unable to catch seals and must only run behind their mother polar bear. At the end of the round, the polar bears count to see if they have collected enough tokens to survive – at least four for lone polar bears and six for both a mother polar bear and her cub to survive.

If a polar bear has collected less than six tokens but has four or five, the cub has starved and will be returned to the seal population for the next round.

If the polar bear has collected less than four tokens, then neither the mother nor the cub has survived. Once again, record how many polar bears, cubs, and seals survive.

Polar bears that did not have a cub during this round will get a cub if they have seven or more tokens, just like in the first round.

12. In the next round, students are introduced to the **abiotic (non-living) conditions** that are changing due to climate change. Two changes can now be applied to the game:

    1) Increase the number of open water safety zones for the seals by increasing the number of hula hoops on the playing field. Try adding three more hula hoops to the playing area.

    2) Shorten the polar bears' length of hunting season by reducing the number of times the seals have to run back and forth from six to four.

13. Continue playing the game by increasing the number of hula-hoops and reducing the number of cycles for each season.

    When recording the data, be sure to also record what changes have occurred in the simulated ecosystem (increased open water, shortened hunting season). Since these changes will result in poor hunting for the polar bears, lower rates of polar bear reproduction and decreases in survival rates for the bears will follow.

    The game may be played until almost all the bears have died to show how climate change can lead to extinction or extirpation from a particular region.

14. Return to the class in order to analyze the data collected during the game. Use the Teacher Handout, Bearly Any Ice Question and Answer Key to review what was learned during the game.

15. Have students answer some of the below questions in their guidebook.

    How did the length of each round affect the polar bears' chances of catching enough seals to survive?

    Answer: The shorter the round, the more difficult it was to catch the number of seals required.

    What change in the ecosystem does a shorter round represent?

    Answer: The shorter round is equivalent to a shorter season of annual ice. This shorter season reduces the time for polar bears to acquire the food they need for survival.

    How did the number of hula hoops affect the polar bears' chances to catch the required amount of seals in order to survive?

    Answer: The more hula hoops, the more safety zones become available for the seals (i.e. open water), therefore increasing the seals' chance of survival and increasing the difficulty for the polar bears to find the food needed for survival.

What change in the ecosystem do increased numbers of hula hoops represent?

Answer: More hula hoops reflect greater amounts of open water for the seals to take protection from the polar bears.

If the sea ice continues to vanish, what may be the ultimate fate for the polar bear?

Answer: The polar bear could become extinct or at least extirpated from their southern range.

Could the polar bears adapt in order to survive?

Answer: The bears could find other sources of food or methods of hunting. However, adaptation usually takes a very long time and the changes brought on by global warming have been relatively fast compared with rates of adaptation.

What economic and cultural impact would the loss of the polar bear have for northerners?

Answer: Many communities have active sport hunting and ecotourism businesses that depend on world interest in the polar bear. The polar bear is also of great cultural importance to the Inuit including: legends, hunting skills development, clothing and food sources, as well as traditional rites of passage into adulthood.

Source: www.climatechangenorth.ca

Guidebook Assessment

Data Table

Answers To Questions

Traditional Activity

Fish Lake

Aquatic Studies

To determine abiotic and biotic factors in a lake near the camp, and practice making water management decisions based on these factors.

Learning Outcomes

Science 7

Analyse the roles of organisms as part of interconnected food webs, populations, communities, and ecosystems

Assess the requirements for sustaining healthy local ecosystems

Evaluate human impact on local ecosystems

Measure substances and solutions according to pH, solubility, and concentration

Science 8

D3 Describe factors that affect productivity and species distribution in aquatic environments

Materials

Water Sampling Kit (pH, dissolved oxygen, bacteria, temp, nitrate & phosphorus)

Ice Auger Or Axe	Benthic Sampler
Dissection Kits	GPS
Pencils	Tub (For lake bottom benthic samples)
Student Booklets	

Procedure

1. With assistance from camp staff, drill a hole into the ice or using an axe chip a hole into the ice. Ensure the hole is clearly marked and students are safely around the hole. Remind them of safety precautions.
2. Take water samples using clean containers. Water testing can be done in a warm tent.
3. Using the benthic sampler take several samples of the lake bottom and place in the tub.
4. Mark the hole with a stick or sign. Take GPS location.
5. Take the samples back to the warm tent.

WATER TESTING

6. On page 42 of the student booklet have students write down the English and Gwich'in name, and the GPS location.
7. On page 42 students will draw the process of getting through the ice. Ensure they give those traditional knowledge details or safety details.
8. On page 43 students will compare their gathering methods to those of researchers.
9. Using a water testing kit (follow the kit's instructions) test the water for dissolved oxygen, pH, nitrates, phosphates, bacteria and temperature. Record the information on page 43. Ensure students read the information on why they are testing for that substance.
10. After the water testing, students will answer the water management questions (that pertain to their grade level) on page 45.

BENTHIC SAMPLING

11. On page 46 work through the introductory benthic sampling questions together.
12. Give a quick lessons on ecosystems abiotic (non-living – rocks, sand, water, etc.) and biotic (living – insects, mammals, zooplankton, algae, etc.) components.
13. Using dissecting tools pick through the benthic sample looking for abiotic and biotic factors. Have students record their findings on pages 47 and 48. Use the Aquatic ID book to identify any insects.

WATER & TRADITIONAL KNOWLEDGE

14. As a group read through page 49 Hanna's story.
15. Students will answer the questions on page 49 now knowing about water testing, and biotic/abiotic factors.
16. Clean up equipment and return samples to the lake hole.

GUIDEBOOK ASSESSMENT

Water Testing
Benthic Sample: Abiotic & Biotic
Traditional Knowledge & Water

Traditional Activity

Weather & Environmental Conditions

Weather Logger

To learn how to monitor the environment and to practice recording data over a period of time. To learn how to use data to understand trends, and make outdoor and indoor decisions.

Learning Outcomes

Science 8 & 9

A3 Represent and interpret information in graphic form

A7 Describe the relationship between scientific principles and technology

A8 Demonstrate competence in the use of technologies specific to investigative procedures and research

Math 9

D3 Develop and implement a project plan for the collection, display, and analysis of data by formulating a question for investigation, choosing a data collection method that includes social considerations, selecting a population or a sample, collecting the data displaying the collected data in an appropriate manner and drawing conclusions to answer the question

Materials

Weather Logger
Poster Paper
Felt Markers

Procedure

1. Create the teaching tent posters. These posters will be used throughout Culture Camp to track weather information.

Poster 1: Temperatures 6 Hour Intervals

Day	6 a.m	Noon	6 p.m.	Midnight
1				
2				
3				
4				

The chart will continue until the last day of camp.

Poster 2: Wind Speed

Strongest Wind: Date:

Poster 3: Precipitation (snow, rain)

Day	Amount of Precipitation
1	
2	
3	

2. On the first day of camp teach students how to read information from the weather logger.
3. Have the students fill in the teaching tent poster information & weather areas in their booklets.
4. Have the students fill in the graphing charts in their booklets including:
   1) 4-line color graph for the different times vs. temperature and
   2) a bar graph for amount of precipitation.
5. Have the students explain trends in the data.
6. Compare the weather information with data from 20 years ago by discussing the temperatures with an Elder. It is the same? Colder? Warmer? How do they know? What do they remember?

Guidebook Assessment

Weather Data Recorded
Graphs
Trends

Traditional Activity

Night Skies

Telescope & Celestial Bodies

To understand the major components of the solar system and learn how technology allows us to learn more about celestial bodies. To learn how celestial bodies play a major role in Aboriginal peoples' lives.

Learning Outcomes

Science 9

D1 Explain how a variety of technologies have advanced understanding of the universe and solar system

D2 Describe the major components and characteristics of the universe and solar system

D3 Describe traditional perspectives of a range of Aboriginal peoples in BC/YT on the relationship between the Earth and celestial bodies

D4 Explain astronomical phenomena with reference to the Earth/moon system

Materials

Telescope (optional)
Flashlights
Student Booklet
Ipad with the Night Sky App (optional)
Star Maps & Books
Compass
Pencil

PROCEDURE

Traditional Perspective

1. Invite an Elder or traditional teacher to share a story about the stars, moon or other celestial bodies.
2. Students are to record or draw the story in their guidebooks.

Telescope/iPad & Star Sketching

1. Set up the telescope in a safe, even location and wait for nightfall.
2. Identify north, south, east and west using a compass or iPad.
3. Using the star maps try to identify various stars and star formations with and without the telescope or iPad.

4. Students will record the stars identified and draw the star formations.
5. Students will complete booklet question: Were there any other celestial bodies identified? (e.g.: comets, northern lights, etc.)

Guidebook Assessment

First Nation Story: Retelling Or Drawing
Star Identification
Star Formations
Other Celestial Bodies

Teacher Notes....

Traditional Activity

Recording History

Pictures, Video Clips & Stories For The Culture Camp Magazine

To practice recording information over a period of time including oral, written and visual information. To assist in the production of a schoolwide camp newsletter that will be used in legacy and literacy.

Learning Outcomes

Language Arts 7

A1 Use speaking and listening to interact with others for the purposes of contributing to a class goal, exchanging ideas on the topic, making connections & completing tasks

A5 Select and use various strategies when expressing and presenting ideas, information, and feelings

C1 Write a variety of clear, focussed personal writing for a range of purposes and audiences that demonstrates connections to personal experiences, ideas, and opinions

C2 Write a variety of effective informational writing for a range of purposes and audiences that communicates ideas to inform or persuade

C3 Write a variety of imaginative writing for a range of purposes and audiences, including short stories, passages, and poems modelled from literature

C4 Create meaningful visual representations for a variety of purposes and audiences that communicate a personal response, information, and ideas relevant to the topic

Language Arts 8

A1 Interact and collaborate in pairs and groups to support the learning of self and others; explore experiences, ideas, and information; understand the perspectives of others

A2 Express ideas and information in a variety of situations and forms to explore and respond; recall and describe; narrate and explain; persuade and support; and engage and entertain

C1 Write meaningful personal texts that explore ideas and information to experiment; express self; make connections; reflect and respond; and remember and recall

C2 Write purposeful information texts that express ideas and information to explore and respond; record and describe; analyse and explain; persuade; and engage

C3 Write effective imaginative texts to explore ideas and information

C4 Create thoughtful representations that communicate ideas and information to explore and respond; record and describe; explain and persuade; and engage

Language Arts 9

A1 Interact and collaborate in pairs and groups to support the learning of self and others; explore experiences, ideas, and information; understand the perspectives of others

A2 Express ideas and information in a variety of situations and forms to explore and respond; recall and describe; narrate and explain; persuade and support; and engage and entertain

C1 Write meaningful personal texts that explore ideas and information to experiment; express self; make connections; reflect and respond; and remember and recall

C2 Write purposeful information texts that express ideas and information to explore and respond; record and describe; analyse and explain; persuade; and engage

C3 Write effective imaginative texts to explore ideas and information

C4 Create thoughtful representations that communicate ideas and information to explore and respond; record and describe; explain and persuade; and engage

Visual Arts 7

Create images that convey beliefs and values, incorporate the styles of selected artists from a variety of social, historical, and cultural contexts

Create images using the elements and principles to produce particular styles of art, emphasizing particular elements and principles Using the elements and principles to produce a variety of effects and to convey mood and meaning

Demonstrate an understanding of the impact of images within various social, historical, and cultural contexts

Visual Arts 8

Create images that support or challenge personal and societal beliefs, values, traditions, or practices, that incorporate stylistic elements from various artists, movements, and periods in response to historical and contemporary images or issues, and that reflect a sense of personal and social responsibility

Visual Arts 9

Create images that support or challenge personal and societal beliefs, values, traditions, or practices, demonstrate an awareness of the styles of various artists, movements, and periods and respond to historical and contemporary images or issues

Create images that reflect a sense of personal and social responsibility

Materials

Digital Cameras
Camera Charger
Downloading Cord
Laptop

Procedure

1. Students will be shown:
    - How to safely use and take care of the camera.
    - The location where the equipment will be stored.
    - How to take pictures and the different features for various outdoor/indoor scenes.
    - How to download and label pictures and video clips.
2. Students will complete their picture taking checklist (guidebook).
3. Students will record information (journaling, stories, facts, etc.) in their guidebook.
4. This information will be used to write stories, articles, lists, etc. for the *PushUp Press* magazine.
5. **Post-Camp Activity** – Editing and compiling stories and pictures for the magazine.

Guidebook Assessment

Picture Checklists
Journaling Information

Reflection transforms experience into genuine learning about individual values and goals, and about larger social issues.
– Colorado State University

Teacher Notes....

Grades 4-6 lessons

Everyone should go to school and learn more things. You're not too old to learn.
• Elder Edith Josie

Traditional Activity
GOVERNANCE

CHIEF & COUNCIL - FOR THE DAY!

Students will learn the government structure of Vuntut Gwitchin Government, and roles, responsibilities and leadership skills of an elected Chief and Council. Students will practice what they've learned through role playing Chief and Council daily at camp.

LEARNING OUTCOMES

Social Studies 4

A1 Apply critical thinking skills including comparing, imagining, inferring, identifying patterns, and summarizing – to selected problems and issues

B1 Distinguish characteristics of various Aboriginal cultures in BC and Canada

C1 Compare governance in Aboriginal cultures with governance in early European settlements in BC and Canada

Social Studies 5

A1 Apply critical thinking skills including hypothesizing, comparing, imagining, inferring, identifying patterns, and summarizing to a range of problems and issues

A3 Gather a body of information from a variety of primary and secondary sources

A4 Create a presentation on a selected topic

C3 Identify the distinct governance structures of First Nations in Canada

Social Studies 6

A1 Apply critical thinking skills including comparing, classifying, inferring, imagining, verifying, identifying relationships, summarizing, and drawing conclusions – to a range of problems and issues

MATERIALS

Student Booklet
Pencils & Erasers
Chief & Council For The Day Sign
Slips Of Paper

Procedure

1. Discuss the roles and responsibilities of the Vuntut Gwitchin Chief & Council.
2. Starting on day two the students' names will be written on the slips of paper and names will be drawn from the slips for the Chief and the two Council members. These names will be recorded on the poster board.
3. The Chief and Council are responsible for problem solving around camp (e.g. garbage, clean up, chore allocation, etc.) and may require meeting time during the day to discuss the issues and their solutions/consequences. These solutions and consequences will be shared at camp to youth, teachers and workers.

   **Major issues (bullying, disrespect, etc.) are the responsibility of the teachers and supervisors.*

4. These names are returned to the Chief and Council pool for the next day. The process is repeated on the following day.
5. Students will complete page 19 as the days pass. Make sure the students see a connection between their solutions and the betterment of the camp community.

Guidebook Assessment

Problem And Solution Chart

Traditional Activity
Trading

Trading Post

Students will reflect on their past trading experiences. Students will earn "furs" (by working hard and being positive) towards items in the Trading Post.

Learning Outcomes

Social Studies 4
B2 Demonstrate knowledge of early European exploration of BC and Canada

B3 Identify effects of early contact between Aboriginal societies and European explorers and settlers

D5 Describe economic and technological exchanges between explorers and Aboriginal people

Social Studies 5
B1 Describe the significance of key events and factors in the development of BC and Canada, including the fur trade, the railroad & the Fraser/Caribou gold rush

Social Studies 6
D1 Describe the importance of trade for BC and Canada

Materials

Student Booklet
Furs
Trading Post Sign
Pencil & Eraser
Fur Ticket & Price
Trading Post Items

Procedure

1. Students will earn furs and each fur is worth money at the last day trading post. Furs are earned by working hard, being positive, speaking Gwich'in and helping around camp.
2. Students will list the chores that they need to complete at camp in order to earn furs on page 20.

Last day

3. Set up the trading post (sign, poster & the items with their assigned prices) and have two people act as storekeepers.
4. Students will trade their fur tickets for trading post items. Remember to barter with the students.

Guidebook Assessment
Chore List

Teacher Notes....

Traditional Activity
Snaring Rabbits

Introduction to the Microscope and Dissection Tools, Rabbit Dissection & Roles of Organs

To learn proper dissection techniques and to understand bodily system words in English and Gwich'in. To learn how a microscope works. To understand the rabbit's role in a northern habitats's food chain and food web.

Learning Outcomes

Science 4
Compare the structures and behaviours of local animals and plants in different habitats and communities

Analyse simple food chains

Demonstrate awareness of the Aboriginal concept of respect for the environment

Science 5
Describe the basic structure and functions of the human respiratory, digestive, circulatory, skeletal, muscular and nervous system

Explain how the different body systems are interconnected

Science 6
Demonstrate the appropriate use of tools to examine living things that cannot be seen with the naked eye

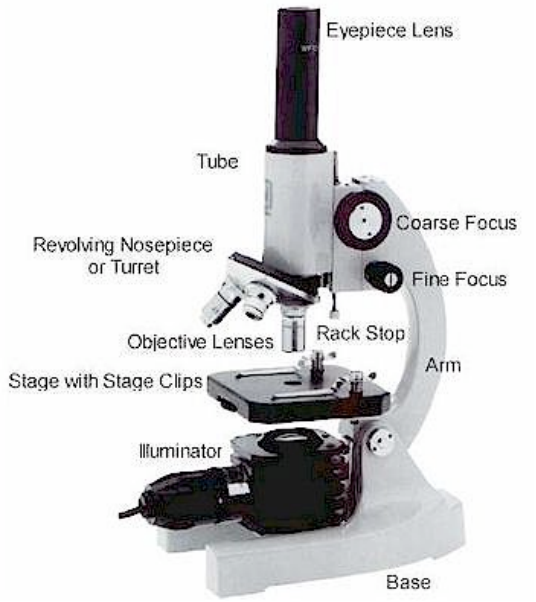
Materials

Dissection Kits
Microscope
Rabbit Systems Guide
Wax Tray
Microscope Slides
Guidebook

Procedure

1. Students will assist (as needed) the traditional guide with the setting of snares, checking the snares and skinning the rabbits.
2. Discuss with the students the ethical issues of using animals in a dissection. Discuss the differences between rural and urban animal dissections..
3. Pin the rabbit belly-side up in the wax tray.
4. The students will carefully make a cut from the middle of the throat downwards towards the anus. The students may cut the ribcage as well with scissors.

5. Students will identify the rabbit parts & body systems in English & Gwich'in. The parts will be labeled in both languages in their guidebooks.
6. **Main systems to identify:**
    - circulatory (heart, major blood vessels)
    - respiratory (lungs, trachea, bronchi, pulmonary arteries, pulmonary veins)
    - digestive (mouth, teeth, esophagus, stomach, pancreas, small intestine, large intestine, rectum, anus)
    - skeleton (bones, skull)
    - muscular (major muscle groups)
    - nervous (brain, spinal cord, nerves)
7. The teacher will remove a couple of organs for a closer view under the microscope.
8. The teacher will introduce the students to the parts of the microscope.



See Muskrat Dissection Grades 7-9 for a detailed explanation.

9. The teacher will prepare the slides and focus the microscopes. The students will have a look at the magnified organs.
10. On page 28, the students will work with the teacher, traditional teacher, or use prior knowledge and magnified views of the organs to try to determine the role of the different organs.
11. Remove the stomach and carefully cut the stomach open.
12. On page 27 the students will record what they have discovered in the stomach.
13. Students will also examine the rabbit's teeth. They will try to make the connection between the stomach contents and the rabbit's teeth.

Guidebook Assessment

System & Organ Labeling: Gwich'in & English
Stomach Contents
Roles Of Organs

The teacher, Jenny and Grade 5 student, Shaylene review the organs and tissues of the various body systems. Both teacher and student are reviewing the parts in Gwich'in and English, as well as, organ and tissue functions.

The dissection took place after supper. Students are refreshed and ready to keep learning all evening long. Interactive, relevant activities allow for ALL day learning and teaching. The students' excitement for learning keeps teachers recharged and fresh.

Traditional Activity

Trapping Muskrats

Tally Charts and Graphing

To understand trapping trends and healthy populations using various math techniques. Being able to draw conclusions and solve problems.

Learning Outcomes

Math 4

C2 Read and record calendar dates in a variety of formats

D2 Construct and interpret pictographs and bar graphs involving many-to-one correspondence to draw conclusions

Math 5

D2 Construct and interpret bar graphs to draw conclusions

Math 6

D1 Create, label, and interpret line graphs to draw conclusions

Materials

Flip Charts
Calculator
Felt Markers
Rulers

Procedure

1. Assist with setting traps, checking traps and skinning muskrats.
   - A poster from the grade 7-9 Culture Camp will be set up as follows:

Date	Number of Muskrats Caught

2. There will be a muskrat trapping bar graph that they can fill in daily. Students will draw the bar in at the end of each day. A graph will be used for the grade 1-3 students.

Components:
- Title
- Labeled X-axis & Y-axis
- Proper "Number of Muskrats" scale
- Proper date scale
- Straight lines

3. At the end of the Culture Camp week have the students fill out their math sections of the booklet.
4. Describe the trends of the data (increasing daily, decreasing daily and remaining the same) and why these trends occur.

Guidebook Assessment
Tally Chart
Graph & Trends

Students quickly get into a routine of checking traps then recording results at the camp. Make sure all students have a chance to record the information at the camp and then in their individual guidebook.

"On-the-Lake" math questions –

What is the fraction or percentage of muskrats caught versus the number of traps set?

Convert the percentage or fraction to a decimal.

Estimate the distance (meters) from trap to trap.

Traditional Activity
Trapping Muskrats

Muskrat Dissections, Body Systems Identification & Systems Drawings

To learn proper dissection techniques and to understand bodily systems in English and Gwich'in. To learn how a microscope works and practice drawing and sketching based on these magnified images.

Learning Outcomes

Science 4
Compare the structures and behaviours of local animals and plants in different habitats and communities

Demonstrate awareness of the Aboriginal concept of respect for the environment

Science 5
Describe the basic structure and functions of the human respiratory, digestive, circulatory, skeletal, muscular and nervous system

Explain how the different body systems are interconnected

Materials

Dissection Kits
Wax Tray
Muskrat Systems Guide

Procedure

1. Assist as needed with:
    - Setting the traps with a traditional guide.
    - Skinning the muskrats.
2. Discuss with the students the ethical issues of using animals in a dissection. Discuss the differences between rural and urban animal dissections.
3. Pin the muskrat belly-side up in the wax tray.
4. The students will carefully make a cut from from the middle of the throat downwards towards the anus. Student may cut the ribcage as well with scissors.
5. Students will identify the muskrat parts & body systems in English & Gwich'in. The parts will be labeled in both languages in their guidebooks.

Main systems to identify:

- circulatory (heart, major blood vessels)
- respiratory (lungs, trachea, bronchi, pulmonary arteries, pulmonary veins)
- digestive (mouth, teeth, esophagus, stomach, pancreas, small intestine, large intestine, rectum, anus)
- skeleton (bones, skull)
- muscular (major muscle groups)
- nervous (brain, spinal cord, nerves)

6. Students will choose a body system and sketch the series of organs for that system.
7. Wash and disinfect the tools and the wax tray. Dispose of any unused animal parts properly.

Guidebook Assessment

Gwich'in & English Muskrat Parts
Body System Sketch

The traditional and academic teachers should both emphasize "animal respect" during a dissection. Instilling these values early will ensure that the students will increase their learning and reflection during the activity, and be able to make proper decisions and respectful (animal) decisions in the future.

Traditional Activity

Understanding the Water

Aquatic Studies

To understand and discover life forms at different layers of a frozen body of water. To examine the living and nonliving components of a lake sample.

Learning Outcomes

Science 6

Demonstrate the appropriate use of tools to examine living things that cannot be seen with the naked eye

Analyse how different organisms adapt to their environments

Explain obstacles unique to exploration of a specific extreme environment

Materials

Ice Auger or Axe
Magnifying Glass
Student Booklets
Tub (for lake bottom benthic samples)
Benthic Sampler
Microscope (optional)
Pencils

Procedure

1. With assistance from the camp staff, drill a hole into the ice or using an axe chip a hole into the ice. Ensure that the hole is clearly marked and the students are gathered safely around the hole. Remind them of safety precautions.
2. Take water samples using the clean containers. Water testing can be done in a warm tent.
3. Using the benthic sampler take several samples of the lake bottom and place them in the tub.
4. Mark the hole with a stick or a sign and mark the GPS location.
5. Take the samples back to the warm tent.
6. On page 22 students will sketch the process of taking a benthic sample. Discuss the challenges and risks of taking water and lake bottom samples.
7. Give students time to explore the lake bottom sample.
8. Students will sketch the living and the nonliving components of the lake sample on pages 22-23.
9. Give students the chance to examine the water sample. Have them sketch and color the water sample on page 24 and answer the water questions.
10. Clean up the equipment and return the samples to the lake hole.

Guidebook Assessment

Benthic Sampling Sequence
Living And Nonliving

Teacher Notes....

Traditional Activity

Caring for the Land

Camp Promise

To discover what causes garbage to end up out on the land and how this garbage affects wildlife. To understand how one's action can effect a larger environment. To learn how to make a group promise that helps the environment and involves consequences if the promise is broken.

Learning Outcomes

Science 4

Demonstrate awareness of the Aboriginal concept of respect for the environment

Determine how personal choices and actions have environmental consequences

Science 5

Analyse how the Aboriginal concept of interconnectedness of the environment is reflected in culture

Responsibility for and caretaking of resources

Materials

Student Booklet

Procedure

1. **Background**

If people are not conscious of their wastes, garbage can end up around camp, in the water systems and even be consumed by wildlife.

Plastic, instead of biodegrading, photodegrades—it breaks up into smaller and smaller pieces. These pieces of nondigestible debris are often mistaken for food by animals, including foraging birds. Adult birds gather these pieces and feed them to their chicks.

Derelict fishing nets and lines, another type of debris, can entangle and harm birds, waterfowl and other animals.

Households and communities can prevent trash from getting into waterways by making sure that garbage is disposed of properly. Recycling bottles, cans and other products reduces the amount of trash headed for landfills. Reusable shopping bags and containers also decrease the amount of trash produced from single-use items.

2. Brainstorm with students (on flip chart paper) various debris (garbage) that they have found on the shore, around town or along the trails.
3. Discuss the following questions:

   - What is debris?
   - What are some ways that trash winds up in the ocean?
   - Can debris collect in Culture Camp? How?
   - Could the debris have an effect on the fish, birds or muskrats?
   - How can we prevent or stop in debris entering the lakes around Culture Camp?
   - Is this important? Why or why not?

4. Creation of a class pledge re: debris and Fish Lake.

Examples:

I promise that I will not throw garbage on the ground (or lake) at Culture Camp.

The camp area will be a garbage-free zone.

5. Students will record the promise in their guidebook and in the classroom tent. Optional: Students will create signs for around the camp.
6. **Optional**: Discuss possible consequences for littering and implement them in camp.
   For example: If caught littering, the student will have to wash all of the supper dishes.

Guidebook Assessment

Promise & Consequence

Students are responsible for their living area including:

- *Setting up cots and bedding*
- *Cleaning in and around their tent*
- *Hauling in wood*
- *Picking up garbage around the camp*
- *Washing their own dishes*
- *Hanging up clothing to dry*
- *Packing up cots, bedding and personal gear*
- *Collecting snow for wash water*
- *Starting & keeping a fire going (experienced students only)*

Traditional Activity
Weather

Weather Logger & Weather Interview

To learn how to monitor the environment and to practice recording data over a period of time. To learn how to use data to understand trends, and make outdoor and indoor decisions.

Learning Outcomes

Science 4
Measure weather in terms of temperature, precipitation, cloud cover, wind speed and direction

Analyse impacts of weather on living and non-living things

Science 6
Analyse how different organisms adapt to their environments

Explain obstacles unique to exploration of a specific extreme environment

Assess technologies used for extreme environments

Describe contributions of Canadians to exploration technologies

Math 6
D1 Create, label, and interpret line graphs to draw conclusions

D2 Select, justify, and use appropriate methods of collecting data, including questionnaires, experiments, databases and electronic media

Language Arts 4, 5 & 6
A1 Use speaking and listening to interact with others for the purposes of contributing to a class goal, exchanging ideas on the topic, making connections & completing tasks

Materials

Weather Logger
Poster Paper
Felt Markers

Procedure

1. These posters will be used throughout the whole Culture Camp to track weather information. Grade 7-9 students have already started recording information.

Poster 1: Temperature 6 hour Intervals

Day	6 a.m.	Noon	6 p.m.	Midnight
1				
2				
3				
4				

The chart will continue until the last day of camp.

Poster 2: Wind Speed

Strongest Wind: Date:

Poster 3: Precipitation

Day	Amount of Precipitation (cm)
1	
2	
3	

2. On the first day teach students how to read information from the weather logger.
3. Have students fill in teaching tent poster information & weather areas in their booklets.
4. Have students fill in graphing charts in their booklets including:
    - A line graph for a time of their choice (for example: plotting only 6 a.m.).
    - A bar graph for the amount of precipitation.

5. Have the students explain trends in the data.
6. Compare the weather information with data from 20 years ago by discussing the temperatures with an Elder. It is the same? Colder? Warmer? How do they know?

Guidebook Assessment

Weather Data Recorded
Graphs
Trends
Comparison with Past Temperatures

Teacher Notes....

Traditional Value
Being Physically Healthy

Being Active Makes You Healthy!

Students will be active (traditional activities, games, chores, etc.) at camp. Students will identify various ways they are active at camp and learning on the land. Students will predict and discuss how being physically active helps various body parts.

Learning Outcomes

Majority of the Grades 4 – 6 physical education learning outcomes.

Materials

Student Booklet
Pencil & Eraser

Procedure

1. Be very active at camp (e.g., snowshoeing, walking, running, playing games, hauling wood, hauling snow, etc.).
2. Students will reflect on their physical activities at camp and list them on page 40.
3. Students will predict how these activities help the body.

Guidebook Assessment

Self-Reflection
Predictions

Teacher Notes....

Traditional Activity

Recording History

Pictures, Video Clips & Stories For The Culture Camp Magazine

To practice recording information over a period of time including oral, written and visual information. To assist in the production of a school-wide camp newsletter that will be used in legacy and literacy.

Learning Outcomes

Language Arts 4 - 6

A1 Use speaking and listening to interact with others for the purposes of contributing to a class goal, exchanging ideas on the topic, making connections & completing tasks

A3 Listen purposefully to understand ideas and information,

A5 Select and use strategies when expressing and presenting ideas, information, and feelings

A6 Select and use strategies when listening to make and clarify meaning

B4 View and demonstrate comprehension of visual texts (e.g., cartoons, illustrations, diagrams, posters, photographs, advertising)

C1 Write clear, focussed personal writing for a range of purposes and audiences that demonstrates connections to personal experiences, ideas, and opinions

C2 Write a variety of clear informational writing for a range of purposes and audiences

C4 Create meaningful visual representations that communicate personal response, information, and ideas relevant to the topic

C8 Use writing and representing to express personal responses and relevant opinions in response to experiences and texts

C9 Use writing and representing to extend thinking

Visual Arts 4

Compare images from given social, cultural, and historical contexts

Identify images that have value in the community

Demonstrate an awareness that there are various types of artists in the community

Create images that express personal identity and in response to aspects of art from a variety of historical and cultural contexts

Visual Arts 5

Identify aspects of selected images that indicate the social, historical, or cultural context in which they were created

Demonstrate an awareness of the significance of images in a variety of social, historical, and cultural contexts

Create images 1) that express personal identity; and 2) that reflect aspects of art from a variety of historical and cultural contexts

Demonstrate a willingness to select images from their collections for presentation

Visual Arts 6
Compile a collection of ideas for images drafted using feelings, observation, memory, and imagination

Identify the historical and cultural contexts of a variety of images

Demonstrate an awareness that images influence and are influenced by their social, historical, and cultural contexts

Create images that express beliefs and values, reflect art styles from a variety of social, historical, and cultural contexts

Materials

Digital Cameras
Camera Charger
Downloading Cord
Laptop

Procedure

1. Students will be shown:
    - How to safely use and take care of the camera.
    - The location that the camera will be stored.
    - How to take pictures and different features for various outdoor/indoor scenes.
    - How to download & label pictures and video clips.
2. Students will complete their picture taking checklist (guidebook).
3. Students will record information (journaling, stories, facts, etc.) in their guidebook. This information will be used to write stories, articles, lists, etc. for the Culture Camp magazine.
4. Post-Camp Activity – The editing and compiling of stores and pictures the magazine.

Guidebook Assessment

Picture Checklists
Journaling Information

Friends are important to children. They make life more interesting and fun. Children who have friends are less lonely and depressed. They are also more likely to feel confident and good about themselves. In long-range terms, we know that when kids have good friendships, they will probably do well in school and grow up to be well-adjusted adults. For these reasons, ***it is important for adults to help children learn to be good friends and to have good friends.***
- Source: http://missourifamilies.org

Teacher Notes....

Grades 1-3 Lessons

I want the children to try hard in school and learn as much as you can. That way you're going to get good job and make a good living for yourself.
– Mary Tizya

Traditional Activity
Local Wildlife

The Animals Around Us

To understand the differences between what is living and what is nonliving. To describe the basic needs of living organisms. To focus on one animal and discuss it's role in traditional life and the local food chains.

Learning Outcomes

Science 1
Classify living and nonliving things

Describe the basic needs of local plants and animals (e.g., food, water, light)

Describe how the basic needs of plants and animals are met in their environment

Science 2
Describe some changes that affect animals

Materials

Guide Booklets
Flip Chart
Storybook (with local wildlife as a character)
Pictures (of local wildlife)
Translation Booklet

Procedure

1. As a class, discuss living and nonliving.. What makes something alive?
    - Produces offspring
    - Needs food & water
    - Gives off wastes
    - Made of cells
2. Circle "things" that are alive in student booklet.
3. Brainstorm and create a web of all the local wildlife:

ANIMALS AROUND CAMP

4. Using the Gwich'in cards label the English words with Gwich'in words. Hang the poster up the in classroom.
5. Read a story about a caribou, moose, beaver, etc. and then discuss what that animal needs to live.

6. Have students draw what an animal needs to live in their guidebook.
7. Discuss why this animal is important to the local area (trapping, food, etc.).
8. Have students describe/draw how they feel about the animal and why that animal is important.
9. Have students draw a picture on how they would feel if the animal was gone.

GUIDEBOOK ASSESSMENT

Identifying Animals In English & Gwitchin
Identifying Living And Nonliving
Drawing What An Animal Needs To Live
Writings & Drawings On Valuing Wildlife

On the last full day of Culture Camp 2010, parents, grandparents, teachers, volunteers, traditional teacher & K – Grade 6 students (over 30 people) went together to check the muskrat traps. ***Everyone was welcomed at the camp;*** *therefore* ***role modeling to students included teamwork, cooperation, respect and community learning.***

Traditional Activity

Trapping Muskrats

Tally Charts and Graphing

To understand trapping trends and healthy populations using various math techniques therefore, being able to draw conclusions and solve problems.

Learning Outcomes

Math 1

A3 Demonstrate an understanding of counting by indicating that the last number said identifies "how many" showing that any set has only one count using the counting on strategy using parts or equal groups to count sets

A4 Represent and describe numbers to 20 concretely, pictorially, and symbolically

Math 2

A1 Say the number sequence from 0 to 100

D1 Gather and record data about self and others to answer questions

D2 Construct and interpret concrete graphs and pictographs to solve problems

Math 3

C1 Relate the passage of time to common activities using non-standard and standard units (minutes, hours, days, weeks, months, years)

D1 Collect first-hand data and organize it using tally marks, line plots, charts , and lists to answer questions

D2 Construct, label and interpret bar graphs to solve problems

Materials

Guidebooks

Procedure

1. Assist with setting traps, checking traps and skinning muskrats.
2. The poster from Grade 7 - 9 and 4 - 6 Culture Camp will be set up as follows:

Date	Number of Muskrats Caught

3. There will be a muskrat trapping bar graph that they can fill in daily. Students will draw the bar in at the end of each day.

Components:

- Title
- Labeled X-axis & Y-axis
- Proper "Number of Muskrats" scale
- Proper date scale
- Straight lines

Guidebook Assessment

Tally Chart
Graph

Traditional Activity
Snaring Rabbits

Rabbit Body Part Identification

To identify and learn English and Gwich'in rabbitt body parts. To practice labeling skills.

Learning Outcomes

Science 1
Describe the basic needs of local plants and animals (e.g., food, water, light)

Describe how the basic needs of plants and animals are met in their environment

Describe changes that occur in daily and seasonal cycles and their effects on living things

Science 2
Classify familiar animals according to similarities and differences in appearance

Materials

Magnifying Glasses

Procedure

1. Assist with setting snares and checking snares.
2. Before skinning the rabbit have students identify the following (draw the parts in their guidebooks and label the parts in English & Gwitchin):
    - Back - Paws
    - Ear - Tail
    - Mouth - Teeth
    - Nose - Eyes
    - Claws - Fur

3. Have students look at the parts with a magnifying glass to examine shape, size, texture, etc.

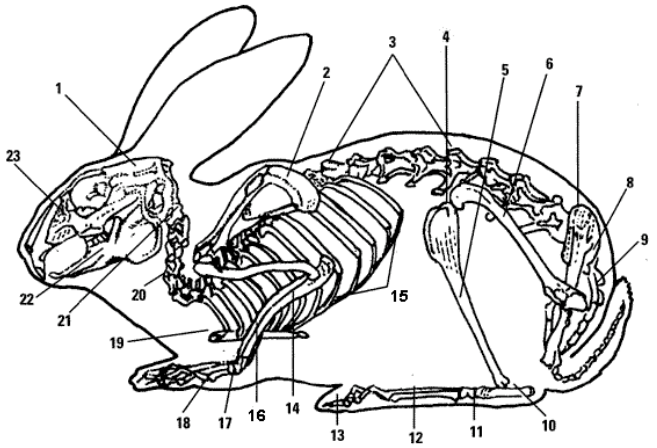
4. After labeling each part, discuss:

    - Why the eyes are that size?
    - Why the tail is shaped a certain way? Does it help the animal?
    - How are the teeth shaped? Does it help the animal?
    - Why is the fur brown? Are there layers to the fur?
    - How is the nose shaped? Why?
    - Why are the ears shaped that way?

5. Students will pick one part of the animal, draw it and write down why it is shaped that way.
6. In a T-chart have students compare and contrast the "Beaver vs. Muskrat" including teeth, shelter, tails and size.
7. Have students write down or draw why muskrats are important to Gwitchin culture.

GUIDEBOOK ASSESSMENT

Drawing & Label
Closer "Look" At A Body Part
T-Chart



1. Cranium (Skull)	6. Femur	11. Tarsus	16. Radius	21. Atlas
2. Scapula	7. Ilium	12. Metatarsus	17. Carpus	22. Mandible
3. Spine	8. Sacrum	13. Phalanges	18. Metacarpus	23. Maxilla
4. Fibula	9. Caudal Vertebrae	14. Ulna	19. Sternum	
5. Tibia	10. Calcaneus	15. Ribs	20. Cervical Vertebrae	

Source: Ohio State University Extension

Traditional Activity

Mushing & Dog Sledding

Get Active!!

To expose students to the traditional activity of dog mushing. To participate in a physical activity that involves stamina, strength, and caring for animals and equipment.

Learning Outcomes

Physical Education 1

A1 Describe benefits of regular participation in physical activity (e.g., it's fun, it's good for their bodies, it provides opportunities to make new friends)

A2 Identify the parts of the body that can work together during physical activity

A3 Identify choices they can make to be more physically active

Physical Education 2

A1 Describe the personal benefits of regular participation in physical activity (e.g., it makes bones stronger, it increases overall heath, it's a way to make new friends)

A2 Describe physical responses that take place in the body during physical activity (e.g., increased heart rate, breathing becomes more rapid, muscles feel tired)

Physical Education 3

A1 Describe the importance of regular, sustained participation in physical activity for developing the strength of the heart, lungs, muscles, and bones

A3 Identify choices people can make to be more active

Materials

Coloring Pencils

Procedure

1. Students will participate in dog mushing, including hooking up dogs, riding in the sled and guiding the dogs.
2. Students will check off all the feelings or circle the faces they had after dog mushing including:
    - Tired - excited - healthy
    - Happy - stronger - weaker
    - Funny - good - bad
    - Sad - hyper

3. Discuss with the students how & why dog mushing is important to the Gwitchin culture.
    - Transportation
    - Protection
    - Culture
    - Hunting
    - Sport

4. Students will draw and color their favorite dog. Give him/her a name!

Guidebook Assessment

Feeling Reflection After PE

Students learn to care for and respect dogs.

Traditional Activity

Weather

Is it Cold?

To learn how to monitor the environment and to practice recording data over a period of time. To learn how to use data to make outdoor and indoor decisions.

Materials

Weather Station

Procedure

1. These posters will be used throughout the whole Culture Camp to track weather information. Grade 7-9 & 4-6 students have already started recording the information.

Poster 1: Temperatures 6 hour Intervals

Day	6 a.m.	Noon	6 p.m.	Midnight
1				
2				
3				
4				

The chart will continue until the last day of camp.

Poster 2: Wind Speed

Strongest Wind: **Date:**

Poster 3: Precipitation (snow, rain)

Day	Amount of Precipitation (cm)
1	
2	
3	

2. On the first day teach students how to read information from the weather logger.
3. Teachers will guide students to fill in classroom posters.
4. Students will fill in the date and temperature in their guidebooks.
5. Students will draw a sun, wind, cloud, snow, etc. for each day as well.

Guidebook Assessment
Weather Data Recorded

By teaching students to monitor weather, through observation, traditional teachings and technology, students can make proper decisions about clothing, transportation and outdoor activities.

Traditional Activity
Recording History

Journals

To practice recording information over a period of time including oral, written and visual information. To assist in the production in a school-wide camp newsletter that will be used in legacy and literacy.

Learning Outcomes

Language Arts 1

A1 Use speaking and listening to interact with others for the purposes of contributing to a class goal, exchanging ideas on the topic, making connections & completing tasks

A2 Use speaking to explore, express, and present ideas, information, and feelings by staying on topic, using descriptive words about people, places, things and events, telling or retelling stories, and sharing connections made

A3 Listen for a variety of purposes and demonstrate comprehension, by retelling/ restating following two step instructions, asking questions for clarification and sharing connections made

A8 Engage in speaking and listening activities to develop a deeper understanding of texts (e.g., presenting a personal collection, listening to the telling of a story from an oral tradition)

C1 Create straightforward personal writing and representations that express simple ideas, feelings, likes, and dislikes,

C2 Create straightforward informational writing and representations, using prompts to elicit ideas and knowledge

C3 Create imaginative writing and representations, often modelled on those they have read, heard, or viewed

C5 Use strategies during writing and representing to express thoughts in written and visual form

Language Arts 2

A1 Use speaking and listening to interact with others for the purposes of contributing to a class goal, exchanging ideas on the topic, making connections & completing tasks

A8 Engage in speaking and listening activities to develop a deeper understanding of texts

C1 Create personal writing and representations that express connections to personal experiences, ideas, likes, and dislikes

C2 Create informational writing and representations about non-complex topics and procedures

C3 Create imaginative writing and representations, sometimes based on models they have read, heard, or viewed

Language Arts 3

A1 Use speaking and listening to interact with others for the purposes of contributing to a class goal, exchanging ideas on the topic, making connections & completing tasks

A2 Use speaking to explore, express, and present ideas, information, and feelings for different purposes

A3 Listen purposefully to understand ideas and information

A5 Use a variety of strategies when expressing and presenting ideas, information, and feelings

A6 Use a variety of strategies when listening to make and clarify meaning

C1 Create a variety of clear personal writing and representations that express connections to personal experiences, ideas, and opinion

C3 Create a variety of imaginative writing and representations following patterns modelled from literature

C7 Use writing and representing to express personal responses and opinions about experiences

C8 Use writing and representing to extend thinking

Materials

Guide Books
Pencils, Felt Markers, Crayons

Procedure

1. Have students fill in their journal pages every evening.
   Journal activities may include:
   - Interviewing a friend on their favorite part of the day
   - Interviewing an Elder on a story from the past
   - Making a list
   - Sharing a story from the day
   - Creating a joke or cartoon
   - Making a poem
   - Drawing a picture

Guidebook Assessment

Journal Entries

Traditional Activity
Working As a Community

My Feelings

To understand and discuss appropriate and inappropriate ways to express feelings. To discuss positive and negative behaviors in dealing with others.

Learning Outcomes

Health 1
C4 Demonstrate an understanding of appropriate and inappropriate ways to express feelings (e.g., appropriate – using "I feel" statements; inappropriate – name-calling, hitting)

C5 Differentiate between positive and negative behaviours in friendships (e.g., positive – sharing, listening; negative – teasing, excluding)

Health 2
C4 Describe appropriate strategies for communicating effectively with others (e.g., active listening, willingness to express feelings)

Health 3
C4 Describe skills for building and maintaining positive relationships (e.g., communication skills, interpersonal skills)

C5 Describe the nature and consequences of various forms of bullying behaviour, including the potential effects on those who are bullied and the potential consequences for students who bully

Materials

Popsicle Sticks
Glue
Storybook About Feelings
Small Paper Plates
Felt Markers, Crayons, Yarn, Construction Paper

Procedure

1. First read a book aloud about feelings.
   If you can not find a book, then just take 5 minutes to discuss how we have different feelings.
   From the book or the discussion write make a list of feelings on chart paper (put a corresponding face beside the feeling).
   - Happy
   - Mad
   - Exited
   - Worried
   - Scared
   - Angry
   - Surprised
   - Tired
   - Sleepy
   - Bored
   - Frustrated
   - Calm

2. Ask the children how they would feel if their favourite doll or toy suddenly broke.
   Ask them how they feel when they are sick.
   Ask the children how they feel when they first meet someone new.
3. After they have talked for awhile about different feelings, have the students make faces of their feelings on 4 different paper plates.
4. Have them glue the popsicle sticks to the bottom for handles.
5. Have them discuss the different faces and when they have felt that feeling.
6. The students then can take the plates home and play with them, or they can keep them at school and play with them together.
7. Students should write down or draw times when they feel a certain way in their guidebook.

Guidebook Assessment

Feelings Activity

Camp can stir a variety of emotions – including homesickness, hyperactivity, worry, excitement and much more – being patient and interacting with the students is key to keeping them focused and on-task.

Teaching Tent & Outdoor Activity Ideas

- Beading
- Art & Craft Projects
- Pictionary with Gwich'in and English Words
- Charades
- Nature Art Contest
- Snowshoeing
- Sardines (around camp)
- Ski-Doo (on the ice playing field)
- Kick Ball (on the ice playing field)
- Archery
- Dog Sledding
- Playing with Puppies
- Skiing
- Trail Riding
- Setting Rabbit Snares
- Polar Bears & Seals – Basic Version for Grade 1-6 students

Teacher Notes....

Appendix I