WOLVES

A Yukon Learning Resource

Revised 2015

Illustatrations on pages 42, 67, 88-92 and 95 by Tanya Handley

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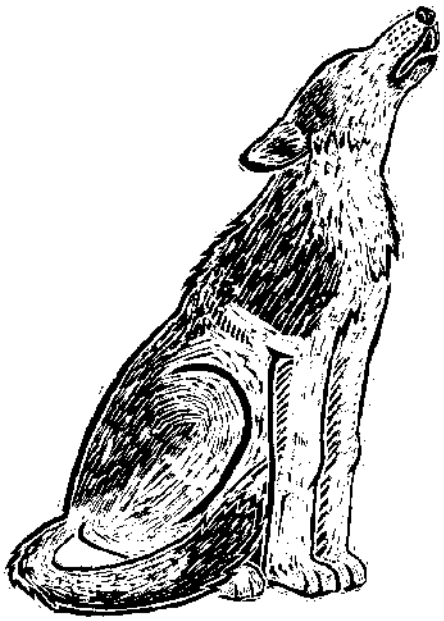

WOLVES
A Yukon Learning Resource

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Yukon Government

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Foreword

Why Wolves?

This package, *Wolves: A Yukon Learning Resource*, is a revision of the 1997 resource package.

Why revise this package?

The wolf is one of the creatures most fascinating to Yukon students. Yukon Environment receives dozens of requests each year for school presentations on wolves. This innate interest in wolves makes *Canis lupus* an excellent entry point for further ecological study.

Another precipitating factor in the revision of this resource was the call for updates from the *2012 Yukon Wolf Conservation and Management Plan*. Continued public attention on wolves reinforced the need for more education about this species.

With changes to the B.C. curriculum underway, this package will continue to be revised to meet the needs of educators and students in the Yukon.

Please contact us with your ideas and feedback.

We hope that you find this collection of activities a worthwhile and useful resource.

Contact:

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Contents

Introduction

Wolves: A Yukon Learning Resource is a package for use in classrooms from Kindergarten through Grade 10. Units and activities are designed to be concise and easily implemented within the Yukon curriculum framework.

The package contains four main sections: a Primary Unit, an Intermediate Unit, a Secondary Unit, and an Resources section with related print and online resource materials. Each activity introduces the topics using one or more inquiry questions, Opportunities for student reflection and links to prior knowledge, along with Yukon references are used throughout this package. Many opportunities are offered to explore different aspects of the biology and management of wolves.

The units are the key focus of this package. Each unit includes curriculum correlations, several activities with extensions, and student resource and work sheets. There are four to seven activities in a unit, with each activity taking about thirty to sixty minutes to complete. The activities support the learning outcomes of the *Science K-7: Integrated Resource Package 2005, Science Grade 8: Integrated Resource Package 2006, Science Grade 9: Integrated Resource Package 2006, Science Grade 10: Integrated Resource Package 2008***,** as well as many learning standards for the 2013 draft science curricula as developed by the British Columbia Ministry of Education. Correlation charts to the current 2005 and draft 2013 science curricula as well as links to English Language Arts, Visual Arts, and Social Studies can be found in the introduction to each unit.

Although the units are divided by grade level, we strongly recommend you review all the activities. Many are adaptable to other levels and include extensions that can be incorporated within different grades.

The Primary Unit provides activities to introduce students to wolves: what is a wolf, where do they live, what are their needs, adaptations, and what is their role and importance in Yukon.

The Intermediate Unit offers students opportunities to examine characteristics of wolves, northern food webs, wolf communication and predation behaviours, First Nations cultural connections to wolves, and examining the value of wolves from different perspectives and opinions.

The Secondary Unit encourages students to explore population dynamics of wolves and their prey, wolf management, and the evaluation of media reporting related to wolf issues.

All resources in the Resources section are Yukon-based and can be accessed as background information for teachers or research material for students.

First Nations and Wolves

Traditionally, First Nations did not hunt wolves for food, but may have used their pelts for clothing and blankets. The word for wolf in the Athapaskan language is *Agay*. There are several resources to access for perspectives on First Nations and Wolves:

In *Part of the Land, Part of the Water* by Catharine McClellan there is a story told by Angela Sidney of how the Dakl'aweidi clan has used the wolf as their special clan crest (page 266). This book is available through YERS (971.9 MCC).

Yukon Wolves: Ecology and Management Issues (1995)

Response and *Comments on the Recommended Yukon Wolf Conservation and Management Plan* (August 2011)

Ask an elder to speak with your class. Contact the Community Education Liaison Coordinator in your school for help.

PRIMARY UNIT

Kindergarten – Grade 3

Primary Unit Introduction:

Kindergarten – Grade 3

This primary unit was developed to build on students' knowledge and understanding of wolves.

Six Activities

The first activity introduces the main inquiry questions and involves creating a book from products of other activities. The remaining five activities focus on wolf characteristics, needs, and habitat. Each activity can be completed in a 30-45 minute session and includes suggestions for activity extensions.

ACTIVITY 1: My Wolf Book
ACTIVITY 2: A Wolf's Body
ACTIVITY 3: What's That, Habitat?
ACTIVITY 4: A Wolf Pack Game
ACTIVITY 5: Wolf Packs
ACTIVITY 6: The Life Cycle of Wolves

Curriculum Fit

All activities meet science curricula prescribed learning outcomes outlined in the *Science K-7: Integrated Resource Package 2005* as well as many learning standards for the 2013 draft science curricula as developed by the British Columbia Ministry of Education. Correlation charts to the current 2005 and draft 2013 science curricula as well as connection notes for English Language Arts, Visual Arts, and Social Studies can be found on the following pages.

A Unit Beginning

To introduce the unit and Activity 1:

1. Collect images of wolves, both real and cartoon. In class, ask students what wolves mean to them, what words they think of when they hear the word wolf, as well as any questions that they have about wolves. Show pictures of wolves to help prompt responses.

2. Write their responses on a flip chart. Divide the chart in half; on one side, record all responses for story and cartoon wolves and, on the other side, record responses for real wolves.

3. Explain to students they will be exploring real wolves in this unit.

4. Post the list in the room to refer to at the end of the unit.
   Student responses to Activity 1 questions may also be posted and/or referred to throughout this unit.

Resource Materials for the Classroom

Apart from the Resource Materials section of this package, there are other resources to access. Try your school library for a file on wolves.

At the Yukon Education Resource Services (YERS), Yukon Education look for:

- Theme Box: *Wolf Pack*, TB 0111
- Theme Box: *Wolves*, TB 0069

The following resources may be available from Yukon Environment:

- wolf materials including wolf pelts, skulls, and track casts
- resource people for classroom presentations

Contact the Manager, Environmental Education and Youth Programs, Environment

Yukon at 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675 or envirowild@gov.yk.ca.

(continued)

Resource Materials (continued):

Available Online:

Internet resources videos such as Hinterland Who's Who "The Wolf" can be retrieved from: **www.hww.ca/en/multimedia/videos**

Videos, *Wolf Pack*, *Death of a Legend.* National Film Board Videos.

Retrieved from: **www.nfb.ca/film/wolf_pack** (for descriptions, see Resources section)

See Resources section for other sample website resources related to wolves.

A Unit End

To conclude this unit after Activity 6, return to the posted list and Activity 1 questions and ask students explain their new knowledge or new questions to add to the list.

Curricula Correlations

Correlations with current B.C. Science curricula (2005)

Key: The Wolf activity… • strongly reflects all aspects of the learning outcome(s) o reflects most of the learning outcome(s) All activities generally support the learning outcomes, but may require minor modifications or use of extensions	1: My Wolf Book	2: A Wolf's Body	3: What's That, Habitat?	4: A Wolf Pack Game	5: Wolf Packs	6: Wolf Life Cycle
Kindergarten						
Life Science: Characteristics of Living Things						
– describe features of local plants and animals (e.g., colour, shape, size, texture)	o	•				•
– compare common animals	o			o	o	o
Processes and Skills of Science						
– observing and communicating (sharing)	•	o				
Grade 1						
Life Science: Needs of Living Things						
– classify living and non-living things	o					
– describe the basic needs of local plants and animals (e.g., food, water, light)		o	•	o	•	
– describe how the basic needs of plants and animals are met in their environment		o	•	•	•	
Earth & Space Science: Daily and Seasonal Changes						
– describe changes that occur in daily and seasonal cycles and their effects on living things		o	•	•	o	o
– describe activities of Aboriginal peoples in YT in each seasonal cycle						
Processes and Skills of Science						
– communicating (recording)				o		o

Key: The Wolf activity… ● strongly reflects all aspects of the learning outcome(s) o reflects most of the learning outcome(s) All activities generally support the learning outcomes, but may require minor modifications or use of extensions	1: My Wolf Book	2: A Wolf's Body	3: What's That, Habitat?	4: A Wolf Pack Game	5: Wolf Packs	6: Wolf Life Cycle
Grade 2						
Life Science: Animal Growth and Changes						
– classify familiar animals according to similarities and differences in appearance, behaviour, and life cycles	o	o				o
– describe some changes that affect animals (e.g., hibernation, migration, decline in population)				●	●	
– describe how animals are important in the lives Aboriginal peoples in YT						
– describe ways in which animals are important to other living things and the environment			●	●	o	
Processes and Skills of Science						
– interpreting observations	o			o		
Grade 3						
Life Science: Plant Growth and Changes						
– describe ways in which plants are important to other living things and the environment	o		●		o	
Processes and Skills of Science						
– questioning		o		o		

Wolves Across Curricula

Activities in the Primary Unit also connect with most of the learning outcomes from the following current curricula:

- English Language Arts: Oral Language, Reading & Viewing, Writing & Representing
- Arts Education –Visual Arts: Creative Processes
- Social Studies: Skills & Processes, Economy & Technology, Human & Physical Environment

Activity 1:

My Wolf Book

Learning objective

To increase students' overall understanding of and appreciation for the wolf and its role in the environment by expressing their initial perceptions of wolves and comparing wolves to themselves

What is a wolf?

What is the wolf's role in Yukon?

Why are wolves important to Yukon?

Summary

Each student will compile an ongoing folder, containing products from this unit as well as other optional activities, to be assembled into *My Wolf Book* at the end of this unit.

Background

Refer to *Wolves in Yukon: Fact Sheet* (in Resources section of this package)

Activity Introduction

See *A Unit Beginning* in Introduction to the Primary Unit. See Activity 1 Materials and Resources section for sample websites and internet videos that can be used as part of this introduction.

Activity Procedure

1. Ask students to respond to the appropriate inquiry question.

   Responses could be verbal, drawn, or printed (for older students or those working with older grade buddies) and then shared with the class.

   K: *What is a wolf?*

   Gr 1: *How do you know that wolves are living things? What do wolves need to live?*

   Gr 2: *Are wolves important to other animals and the places where they live? Why or why not?*

   Gr 3: *How are plants important to wolves? What questions could you ask to find this out?*

Setting:

Classroom

Materials:

- a folder for each student
- paper
- crayons, pencil crayons, or paint
- scissors
- glue
- photos of wolves (try school library files)
- wolf stories (see Resources Section for ideas)
- Enough copies of the Activity 1: Student Work Sheets A, B, & C for each student
- YERS materials: *All About Animals: Wolf*, video recording (DVD 0833) and/or
- Internet videos: e.g.,
- Hinterland Who's Who "The Wolf" Retrieved from: **www.hww.ca**/**en**/**multimedia**/**videos**
- National Film Board Videos. " Wolf Pack" Retrieved from: **www.nfb.ca**/**film**/**wolf_pack** (1974, 19 min 58 s).

See Resources section for other sample website resources.

2. Explain to students that they will be recording what they have learned about wolves in their own book.

3. Handout out *Activity 1, Student Work Sheet A* and ask students to respond by drawing, painting, or printing their responses to the questions on the work sheet then share with the class.

   When I see a wolf I think of …

   A wolf is the same as me because….

   A wolf is different than me because.…

   Additional classroom discussion may include: *What can you observe about wolves when looking at pictures and seeing them in the wild?*

4. Hand out the folder, a piece of paper and crayons and have students design a title page then place Work Sheet A inside.

5. Explain that as some of the following activities are completed, they will be included in their folder. Students then complete Work Sheet B or write/draw a story told by their own family about wolves.

   Older students can assist younger students with their completion of Work Sheet C or write their own poem about wolves.

   The following activity products will be put into this folder:

   Activity 1: Work Sheets A, B, & C,
   Activity 2: Wolf picture
   Activity 3: Habitat drawing,
   Activity 4: Vocabulary words
   Activity 6: Life cycle sequence chart.

6. 6. At the end of this unit have the students compile the papers in their folder to create a *My Wolf Book.* Ask students to return to their inquiry questions and add any new ideas or explain if any of their ideas have changed.

Extensions

1. Ask your Community Education Liaison Coordinator or an elder or another representative to visit the classroom and discuss the importance of wolves to Yukon First Nations.

2. Have students share their drawings or responses with other students.

3. Students can ask their inquiry question(s) to family, friends, or buddies in another grade and then share their findings with the class.

The colour of wolves' fur can range from pure white to jet black. About fifty percent of Yukon wolves are a grey and white combination with some tan colour on the shoulders and ears. Thirty percent of Yukon wolves are a dark colour, such as black, brown, or dark grey. Less than five percent of Yukon wolves are a white or cream colour.

Activity 1: My Wolf Book – Student Work Sheet A

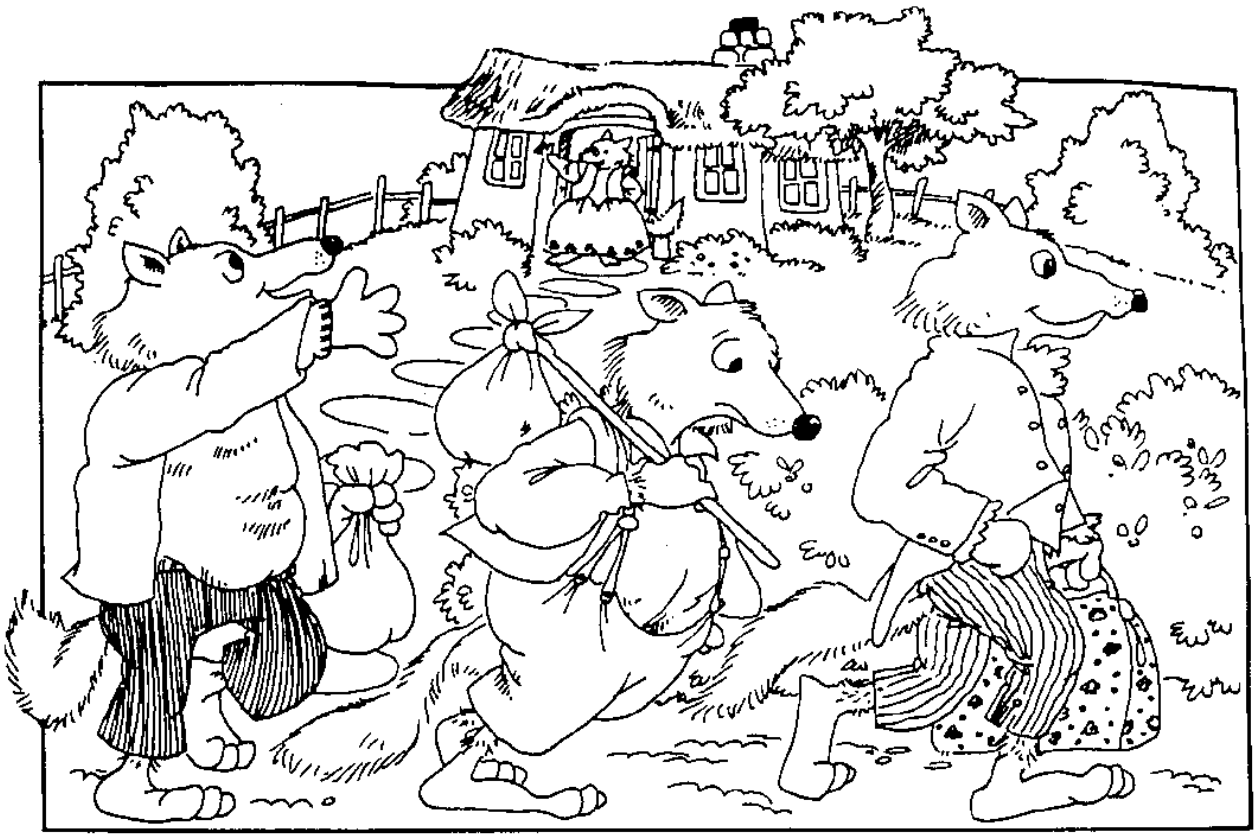
When I see a wolf I think of …

Activity 1: My Wolf Book – Student Work Sheet A

A wolf is the same as me because….

A wolf is different than me because….

Activity 1: My Wolf Book – Student Work Sheet B



Once upon a time there were three little wolves …

Adapted from: Ginn Journeys, Level 4: Once Upon A Time, Ginn Publishing Canada Inc., 1990

Activity 1: My Wolf Book – Student Work Sheet C

Wolves

I like wolves

_____ wolves,

_____ wolves,

_____ wolves,

Any kind of wolf.

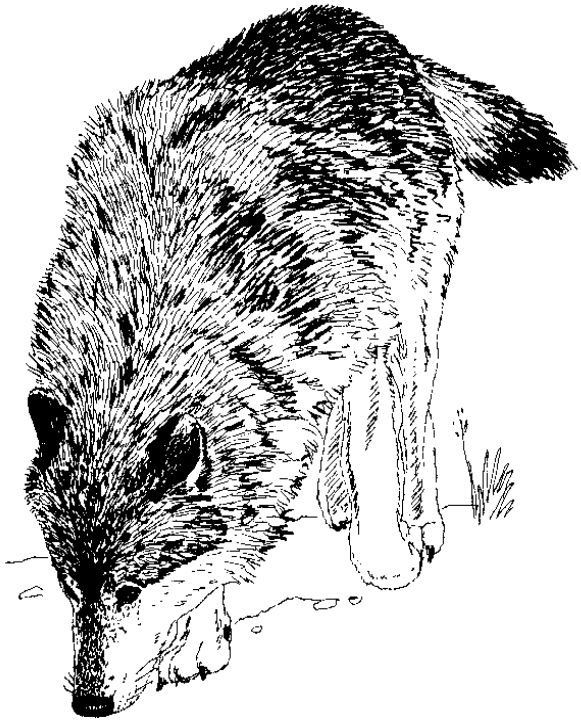
A wolf by a _____,

A wolf in the _____,

A wolf on the _____,

A wolf in a _____,

I like wolves.



_____ wolves,

_____ wolves,

_____ wolves,

_____ wolves,

_____ wolves.

I like wolves.

Setting:

Classroom

Materials:

- Resource material on wolves for classroom display
- paper
- crayons, pencil crayons, or paint
- scissors
- glue
- measuring tape
- bathroom scale
- Enough copies of the Activity 2: Resource Sheet and Student Work Sheets A & B for each student
- Drop sheet with the silhouette of a full-sized wolf (from Environmental Education and Youth Programs, Environment Yukon)
- Alternate or supplementary resource: "Virtual Wolf: A 3-dimensional, interactive wolf skeleton." **www.uwyo.edu/reallearning/wolfindex.html**

(Continued)

Activity 2:

A Wolf's Body

Learning objective

To increase students' awareness of what a wolf looks like and how different body parts help it to survive

How do the parts of a wolf's body help it survive in Yukon?

Summary

On a work sheet, students will identify body parts of a wolf, discuss functions of different parts, cut out body parts (body, head, legs and feet, tail), and paste them on a piece of paper to complete a wolf's body. They will also colour the fur and the eyes.

Background

Refer to *Activity 2: Resource Sheet*, Factual Information about Wolves (Resources section)

Teacher Preparation: To borrow a drop sheet with the silhouette of a full-sized wolf contact the Manager, Environmental Education and Youth Programs, Environment Yukon, Phone: 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675, Fax: 867-393-6206, Email: envirowild@gov.yk.ca

Activity Introduction

1. Have students work in pairs to explore pictorial resource materials in the classroom. Give them five minutes to find out where wolves live and what they look like.

2. Have a discussion about what kind of conditions wolves live in and what they look like.

Activity Procedure

1. Give each student a copy of the *Activity 2: Resource Sheet* and Student Work Sheet A.

2. Choose the 'body' part from the *Activity 2: Student Work Sheet A*. Ask students to show which part this corresponds to on their own bodies and then share how the body of the wolf survive in Yukon.

3. Read or have students read from the list in the *Activity 2: Resource Sheet* and compare with students' prior knowledge.

4. With a measuring tape, measure out the size of a wolf. Measure the height and weight of a few students. Compare the size and weight of students with wolves.

5. Give each student a piece of paper, a pair of scissors, glue and crayons. Have students cut out and glue the body part onto the middle of the piece of paper.
6. Choose the 'tail' from the *Activity 2: Student Work Sheet A.* Ask students to predict the purpose of the wolf's tail. Read or have students read about the tail in the *Activity 2: Resource Sheet* and address any discrepancies with students' earlier responses. Then have students cut out and add the tail to the body part on the piece of paper.
7. Continue with the legs and head until students have put together the wolf and then allow time for students to colour their wolf picture.
8. Discuss the different colour variations of wolf fur, show examples of wolves, noting the variations in fur colour and the predominant colour of eyes (yellow) and have students colour their wolf pictures with crayons.
9. On the back of their piece of paper ask students to list or draw the questions that they still have about a wolf's body or how these body parts help them survive and the differences between wolves and a pet dog. Alternately, use *Activity 2: Student Work Sheet B.* Ask students to share their responses with a partner or the class.

Extensions

1. Include the wolf picture in *My Wolf Book.*
2. Students can use the resource material to label parts of the wolf.
3. Mathematics link: Students measure the length and weight of common items in the classroom and comparing these measurements to the size of a wolf (e.g., How many books need to be stacked on the scale to equal the weight of an average wolf?)
4. Older students could research the questions that they still have about a wolf's body and add to *My Wolf Book.*

Assessments

1. Ask students what they think the most important body parts are that helps a wolf survive and why.
2. In pairs or groups, ask students to explain to their partner or group:

    a. A wolf is the same as me because….

    b. A wolf is different than me because….

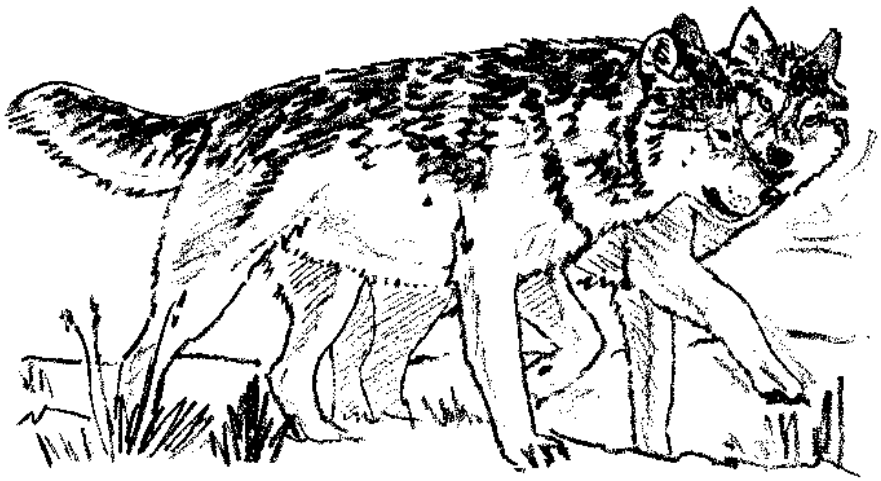
    (Questions from *Activity 1: Work Sheet A*)

Materials (continued):

Teacher Notes: required Quicktime to view 3-D objects; developed for University of Wyoming Zooarchaeology classes but provides good visuals (especially if a real skull is unavailable)

Sources:

1. Jeanette McCrie, direct communication.
2. Robinson, Sandra Chisholm *The Wonder of Wolves: A Story and Activities* Roberts Tinehart, Inc. Publishers 1989



Compared to a dog of similar weight, the wolf is longer, taller and narrower. Its long legs allow it to travel great distances. The wolf's wide front feet act as shock absorbers and snowshoes to help it travel over rough terrain and snow.

Activity 2:

A Wolf's Body—Resource Sheet

Body

- Wolves look like taller and longer Husky or German Shepherd dogs
- Wolves have bigger feet and heads than pet dogs
- Yukon wolves are the largest type of wolf in North America
- Females are smaller than males

Fur

- Wolf fur has layers
    - The bottom layer is soft, thick, and warm fur
    - The top outer layer has long, stiff hairs to keep the soft fur dry
- Fur can be different colours from white to black
- Most common colours are grey mixed with white and tan

Tail

The tail is used for:

- Warmth: the wolf will curl up and put its tail over its face
- Communication examples:
    - playful: tail is held high and wagging
    - aggressive: tail is up and held stiff
    - lower ranked (submissive): tail is held down between legs

Legs and Feet

- The front feet of wolves are large
- The toes spread out when on snow (like snowshoes)
- The large feet also absorb shock from walking or running.

Head

Ears:

- Wolves can move their ears from side to side to tell the direction of sounds
- Wolves' hearing is better than humans
- Ears are also used for different communications
    - anger: ears are straight up
    - fear: ears are laid straight back on the head

Mouth:

- Wolves have a strong jaw to grip, tear, and chew food
- Wolves communicate by making growling, whining, squealing, and other sounds

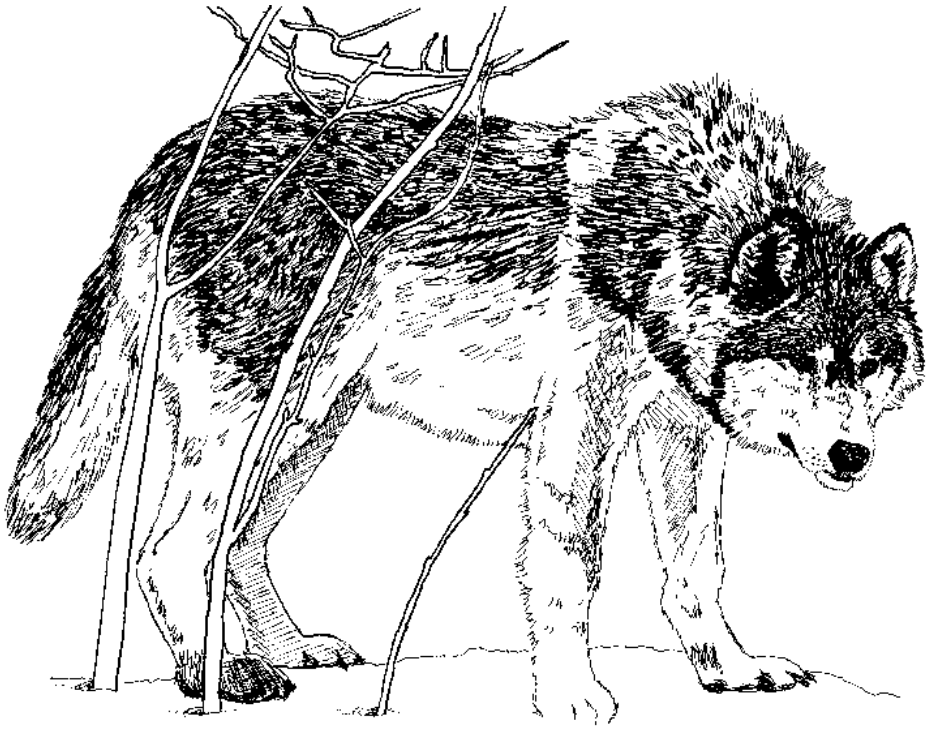
    whining = friendly
    growling = aggressive
    each wolf has a different howl

Nose:

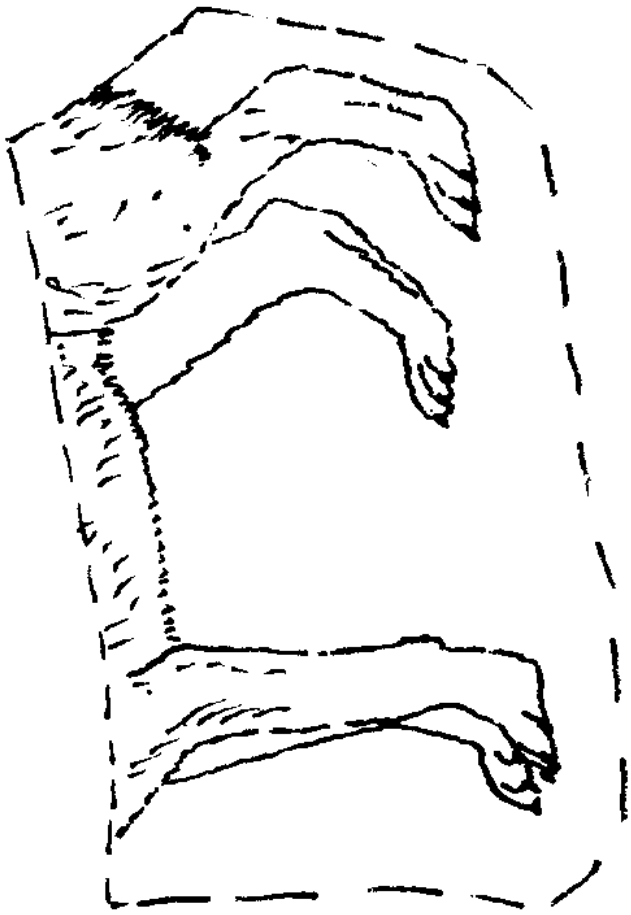
- The wolf's sense of smell is much better than humans
- They can smell the difference between a young and an adult moose
- Wolves communicate by smell
- Wolves mark their territory by urinating on objects

Eyes:

- A newborn wolf pup has blue eyes that change to yellow
- Adults have yellow eyes
- Wolves do not see in colour
- Wolves see well in the dark



Activity 2: A Wolf's Body – Student Work Sheet A



Activity 2: A Wolf's Body – Student Work Sheet B

I still want to know about a wolf's body…

_____

_____

I think that the body part that is most important to help a wolf live is the

_____

because…

_____

_____

_____

_____

A wolf's body is different from a dog's body because…

_____

_____

_____

_____

_____

Activity 3:

What's That, Habitat?

Learning objective

To have students determine their own basic needs and compare to that of wolves

What do living things need to survive (e.g., to live and grow)?

Summary

Students will draw pictures of their own homes and wolves' homes, and will compare basic needs. They will gain an understanding of the term habitat.

Background

Habitat is the arrangement of food, water, shelter or cover, and space suitable to animals' needs. It is the "life range", which must include food and water, as well as escape cover, winter cover, cover to rear young, and even cover in which to play. Cover includes the vegetation, debris and irregularities of the land that provide concealment, sleeping, feeding and breeding areas for wildlife. Space refers to the territorial area that a wolf pack needs to acquire food and survive (600 – 1 000 km^2).

In short, habitat is the scientific word for an animal's home.

Teacher note: This activity was adapted from "What's That, Habitat", p 36, *Project WILD: Activity Guide*, Canadian Wildlife Federation, Western Regional Environmental Education Council, 1995. For information about other Project WILD activities, contact: Manager, Environmental Education and Youth Programs, Environment Yukon, Phone: 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675, Fax: 867-393-6206, Email: envirowild@gov.yk.ca.

Activity Introduction

1. As a warm up, ask students how they can tell if something is alive.
2. Have students work in pairs to explore pictorial resource materials in the classroom. Give them an appropriate amount of time (e.g., five to ten minutes) to find information on where wolves live and what they might need to survive. As an option, ask specific groups to find information on seasonal habitat (summer, fall, winter or spring).
3. Discuss where wolves live and what they need to survive.

Setting:

Classroom

Materials

- resource material on wolves for classroom display
- paper
- crayons

Source:

"What's That, Habitat", p 36, *Project WILD: Activity Guide*, Canadian Wildlife Federation, Western Regional Environmental Education Council, 1995.

Activity Procedure

1. Ask students what types of things they need to live. Discuss with students the following needs (in terms of our own needs): food, water, shelter and space (space includes all the areas used for survival) as well as the actions that they take to obtain these needs. Discuss the influence of other factors such as weather conditions.
2. Hand out the paper and crayons and have each student draw a picture of where they live, including pictures of where they find food, water, shelter and space.
3. Discuss the pictures with students.
4. Then discuss the term habitat and how it encompasses food, water, shelter and space. Have students write 'habitat" at the top of their drawing.
5. Have students think of the wolf and where it lives. Ask them what the wolf needs (food, water, shelter and space) and how a wolf meets these needs.
6. On the reverse side of the first paper (or hand out another piece of paper), ask students to draw a wolf in its habitat (food, water, shelter and space).
7. Discuss the drawings and the habitat components of wolves.
8. Have students write 'habitat' at the top of their drawings.
9. Have students compare their two drawings and discuss the similarities and differences between their needs and the wolf's needs.
10. Have students add both habitat drawings to their folder, *My Wolf Book.*

Extensions

1. Go outside on a guided walk! Ask students to draw, list, or discuss their observations about what local plants, animals, or humans need to survive in their local community. This could be completed at the start or end of Activity 3.
2. Have students think of another Yukon animal and discuss, draw, or write about the needs and habitat of that animal and compare it to a wolf.
3. A large circle chart divided into four with "Habitat" in the centre and pictures or labels in each quadrant (representing food, water, shelter, space) could be used as a classroom display.
4. Revisit a wolf's body parts and ask students to answer the following questions verbally or writing in journals:

How do wolves use their body parts to get the things they need to live and grow?

How are wolves different than humans to get the things they need to live and grow?

How are wolves different than plants to get the things they need to live and grow?

Assessments

1. Ask students to describe four habitat requirements of the wolf and compare with humans or another animal or plant.
2. Ask students to summarize with a partner an example of habitat and one difference in the four components needed by wolves and humans.

Setting:

Gym or large outdoor area.

Materials:

- *Wolves in the Yukon: Fact Sheet* (in Resource Materials section of this package)
- resource material on wolves for classroom display
- moose tails (nylon stockings or pinnies), one per student.

Activity 4:

A Wolf Pack Game

Learning objective

To make students aware of the ways in which wolves live and hunt for food and the use of the terms prey, predator and wolf packs through role-playing.

How do wolves obtain food?

Summary

After a discussion of predator and prey relationships of wolves, students will participate in a physically active tag-like game. Some students will be moose, while others will be wolves. Changes will be introduced and discussed to emphasize the fact that wolves work together as a team to hunt successfully.

Background

Refer to the *Wolves in Yukon: Fact Sheet* (Resources section), *Activity 5 Background*, and any other resource material for information on packs and prey.

Activity Introduction

1. Ask students to draw, list, or verbalize the different ways they get food (e.g., store, garden, hunting, etc.)

2. Outline the vocabulary words:

   predator **–** a wolf is a predator because it hunts, kills and feeds on other animals (such as moose, Dall's sheep and caribou).

   prey **–** the animal the wolf hunts, kills and feeds on is called prey.

   wolf packs – are groups of wolves, that live together. Packs have a ranked order that may be like some families, with a dominant breeding pair. The packs work together as a team to hunt and are more successful than if each hunted individually.

3. Discuss moose as an important prey species for wolves in Yukon. (Refer to the *Wolves in Yukon: Fact Sheet***,** Resources section; show pictures of moose.)

4. Review any classroom resource material on packs, hunting or prey.

Activity Procedure

1. Take students to the game site, identify boundaries and a centre circle. Then outline the game. Begin with all of the students as moose, except one who will be a wolf. All moose will have the moose tail tucked in the back of their pants. When the wolf captures a moose tail, the moose is caught (killed) and will go sit in the centre circle.

2. Stop the game when it is obvious that the wolf is getting tired. Bring students together and discuss how difficult it is for one wolf to hunt alone.

3. Have the wolf choose another wolf and begin the tag game again.

4. After another short while stop the game and bring students together. Discuss whether it was easier with two wolves to get the moose.

5. Have the wolves choose two or three more wolves and let them start the game again.

6. After a few minutes stop the game, bring students in and discuss the results of having a larger group of wolves. Discuss how wolves in the wild work together as a team when hunting prey. Suggest the wolves get together to hunt the moose and work as a team.

7. As a last step before finishing the game have the wolves make up voice or hand signals to communicate to one another while hunting the moose.

8. Debrief the game. Make observations about the physical environment and compare that with the habitat of the wolf. Ask students to brainstorm other factors that may affect the success of a wolf hunt (e.g., weather conditions, health of wolves and moose).

Extensions

1. Try this game during different seasons. Alternately, try this game in winter and compare outdoor game in the snow with indoors in a gym. Link this activity to Activity 2 and ask students to suggest parts of the wolf's body that may help it during hunting (e.g., senses of vision and smell).

2. Read the book resources provided in the YERS: Theme Box: *Wolves* (TB 0069) or *Wolf Pack* (TB 0111). Alternately, incorporate online resources (see Resources section for other sample website resources).

3. Have students write out the vocabulary words *prey*, *predator* and *wolf packs* and then draw and label a picture to show their understanding of those words. Include this piece of paper in *My Wolf Book.*

4. Ask a local hunter, elder, member of the Yukon Fish & Game Association, or Conservation Officer to speak to the class about the process of humans hunting for food. Alternately, students could ask

people within their families to describe a hunt and then share with the class the next day.

Grade 4-7 extension: Older students could research and compare human hunting practices and tools in the past and present within their community and compare these processes to those used by wolves or other carnivores.

Assessments

1. Ask students to describe the terms and provide other Yukon examples of:
    - prey
    - predator
2. Ask students to compare a human family to a wolf pack.
    - Describe how wolves hunt their prey. How are wolves different or the same as humans when finding food?
3. Ask students to complete a self-assessment or peer assessment about their participation.
4. Younger students could turn their backs to the teacher and hold up the number of fingers that corresponds to their level of participation (e.g., 3 = tried my best at all times, 2 = ok attempts, 1 = need to try harder next time). For older students, see the "Student Self-Assesment" sheet in the Resources section.

Activity 5:

Wolf Packs

Learning Objective

To increase students' understanding of the movements, needs and dynamics of a wolf pack by creating a visual representation of wolves, their prey, and habitat

Why are wolves usually part of a pack?

Summary

After gaining an understanding of wolf packs, their habitat and their movements, students will create a large wall mural with two packs. The packs will be moved on the mural each day to demonstrate the needs of wolves.

Background

A pack of wolves is a group of 7-9 wolves on average that live and hunt together. The pack has a hierarchy, with a dominant female and male pair (alpha pair). The pack works as a team to survive.

Space: A wolf pack has a territory of up to 1000 square kilometres that they will mark by urinating on objects to let other wolves know the boundaries of their territory. The pack will defend their territory from other wolves.

Food: Wolf packs wander their territory looking for prey (moose, caribou or perhaps sheep), perhaps travelling as much as 40 kilometres a day and moving through their entire territory in less than a week. They may kill a moose every four to six days, taking about two to three days to eat it.

Water: Their water source may be a stream or river.

Shelter: Wolf packs may find shelter in stands of trees and willows that provide shade in the summer and protection from the wind and snow in the winter. A den, a hole dug out of the side of a hill, provides protection for pups.

Activity Introduction

1. Have students work in pairs to explore pictorial resource materials in the classroom. Give them five minutes to find information on where wolves live and their movements in the area they live. (Or, revisit student worksheets or class summary charts from discussions during Activity 3 and wolf pack understandings gained from Activity 4.)
2. Read short excerpts from a book that will depict the movements of a wolf pack or view a wolf video using a Youtube search, or

Setting:

Classroom

Materials:

- Yukon Environment Grey Wolf Full Mammal Profile (in Resources section of this package and retrieved from **www.env.gov.yk.ca/animals-habitat/mammals/wolf**)
- Yukon Environment "Grey Wolf" Retrieved from: **www.env.gov.yk.ca/animals-habitat/mammals/wolf**
- resource material on wolves for classroom display, such as the following items available from the YERS in the Department of Education:
- Theme Box, *Wolves*, (TB 0069)
- Theme Box, *Wolf Pack* (TB 0111)
- Internet Video, *Wolf Pack*, National Film Board Videos. Retrieved from: **www.nfb.ca/film/wolf_pack** (1974, 19 min 58 s). See Resources section for other sample website resources.

Materials (continued)

- books from which excerpts can be chosen for depicting the movements of wolf packs like:

  Wolf Island (in most school libraries)
  Biography of a Wolf (in Theme Box, Wolves)
  Natural History Series: Wolves (in Theme Box, Wolves)
  The Wolves of Isle Royale (in Theme Box, Wolves)

- paper
- crayons
- scissors
- tape
- at least a two metre piece of brown paper for class mural

Source:

Jeanette McCrie, personal communication.

2a. Read short excerpts from a book that will depict the movements of a wolf pack or view a wolf video using a Youtube search.

2b. Review information from the Factual Information about Wolves Resources section) and have a discussion about a wolf's habitat, their pack and movements.

3. Review information from the Factual Information about Wolves (Resources section) and have a discussion about a wolf's habitat, their pack and movements.

Activity Procedure

1. Tape the large piece of paper to a flat area in the classroom. Tell students they will be creating an area where two packs of wolves will live. Determine the time of year the mural will depict (winter, spring, etc.) and brainstorm on the board what the packs need to survive:

   - food: moose, caribou
   - water: streams, lakes
   - shelter: trees, shrubs, hills
   - space: roughly 600 square kilometres for each pack that includes ridges, valleys, forests, streams, and lakes
   - This list will form the specific parts of the mural.

2. Divide students into small groups and have them draw and colour the specific parts of the mural on separate pieces of paper to paste to the mural or right on the mural itself. Have 14 students each draw a wolf on a piece of paper and have 4 students draw a moose or caribou, and then colour them and cut them out.

3. When the mural and the wolves are completed, explain that the wolves and prey will be taped to the mural. Each day the two packs will be moved according to their survival needs. To keep the interest level high, a simulation card could be drawn each day by one or more of the students.

   Daily movement scenarios could include:

   - large tracts of territory be covered to find a moose
   - a moose is chased, but escapes, one wolf dies from injuries inflicted by moose
   - another moose is chased, killed and then eaten over two days

- small movements across the territory to find water
- a fight with a neighbouring pack over territory, 1 wolf is killed
- after a fight for the dominant male position, the loser leaves the pack to find another pack (which may or may not reject him) or a mate (spring activity)
- the pregnant dominant female digs a den near water, has the pups and the members of the pack bring her and the pups food (spring activity)

4. Discuss where the wolves and moose will be placed on the mural and have some of students tape them (not permanently) to the mural.
5. Each morning, over the course of a week, discuss the daily movement of the pack and then have some of students move the packs and animals.
6. Expand on wolf packs – human family ideas and ask students to write, draw, or verbally explain the answers to the following questions:

How is a wolf pack similar to a human family?

How is a wolf pack different from a human family?

What are the roles within your family?

If completed individually on paper, these comparisons can be added to students' My Wolf Book folder.

Extensions

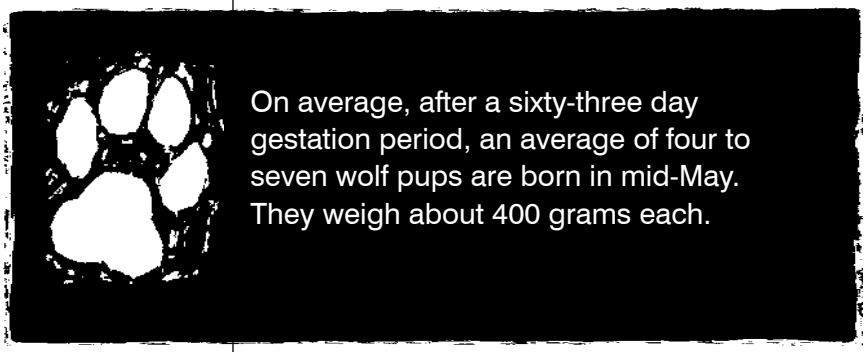
1. Older students could work together in small groups or work with younger students, using their knowledge of wolf packs and their movements, to create a board game as in Activity 5 in the Intermediate Section of this package.
2. Students could provide guided tours of the mural and explain scenarios to other classes.
3. Students write a story or draw: alternate scenarios, changes that occur during a different season, or other species found in the same habitat that might affect a wolf pack.
4. Students could develop a list of questions to ask a Conservation Officer or hunter about their observations of a wolf pack and its behaviours.
5. Yukon First Nations Connection

Background information: Refer to Wolf and Crow clan information in *Social Organization* in "A Handbook of Yukon First Nations Education Resources for Public Schools". YERS book: "Yukon First Nation Clans" K 3839

Invite a member from the local First Nations to share knowledge about the traditional social organization of clans. This could be a partnered activity with a Grade 5 Social Studies class learning about the clan system.

Assessments

1. Ask students to describe a wolf pack, their habitat and movements.
2. Ask students to explain how a scenario (of their choice) may affect a wolf pack.



On average, after a sixty-three day gestation period, an average of four to seven wolf pups are born in mid-May. They weigh about 400 grams each.

Activity 6:

The Life Cycle of Wolves

Learning Objective

To make students aware of the life cycle of wolves and compare it with humans

How do wolf and human life cycles compare?

Summary

Students will put a set of drawings in sequence to show the life cycle of wolves.

Background

Refer to the "A Year in the Life" section in the Yukon Environment Grey Wolf Full Mammal Profile (in Resources section of this package and retrieved from **www.env.gov.yk.ca/animals-habitat/mammals/wolf**)

Activity Introduction

1. Review with students how humans grow. Use about four sequence drawings or photographs to discuss the important stages in the growth of humans. Alternately, ask students to draw 4 different stages of human growth (e.g., baby, youth, adult, senior).
2. Have students work in pairs to explore pictorial resource materials in the classroom. Give them five minutes to find wolves at different ages and information on how they grow. Younger students may just identify pictures.
3. Have a discussion about the life cycle of wolves, using the *Wolves in Yukon: Fact Sheet* as a reference. Compare the life cycle of wolves to the life cycle of humans.

Activity Procedure

1. Give each student a copy of the *Activity 6: Student Work Sheet***,** a piece of paper, a pair of scissors, and glue.
2. Have students cut out the drawings, put them in sequence to represent the life cycle of the wolf and glue them onto the piece of paper.
3. Have them title the piece of paper 'The Life Cycle of A Wolf' and include it in *My Wolf Book*.
4. Discuss as a class why wolf and human life cycles are different. Ask students to write, draw, or verbalize their responses.

Setting:

Classroom

Materials:

- resource material on wolves for classroom display
- paper
- scissors
- glue
- enough copies of *Activity 6: Student Work Sheet* for each student
- alternate or supplementary resource: International Wolf Center "Wolf Pup Physical and Social Development" handout, Retrieve from: **nso.district287.org/pluginfile.php/58405/mod_resource/content/1/pup_timeline.pdf**

Extensions

1. Read the book *Biography of a Wolf* (in Theme Box, *Wolves,* TB 0069) to the students.

2. Do a paired game activity to review wolf facts. This requires a file folder divided into Yes and No and a set of cards with facts which can be answered yes or no. A student draws a card and asks their partner the questions. If the partner answers correctly, they are awarded the point or points indicated in the circle at the bottom of the card. The card then goes in the Yes or No side of the folder. The second student then draws a new card and asks the first player the question. There does not have to be a winner, but the if they are counting points the first one to 25 can be the "alpha" player.

Sample questions:

K: Are wolves usually grey, white, and tan in colour? Do wolves look like moose/bears/dogs?

Gr 1: Is a wolf is a living thing? Does a wolf need water/space/food/shelter/other animals to survive?

Gr 2: Do wolves communicate using their bodies/tail/mouth? Is a moose/mosquito called prey (food) for wolves?

Gr 3: Do plants provide food for the prey of wolves? Do the non-dominant pairs in a pack breed?

Refer to Resources section resources as well as *Activity 2: A Wolf's Body—Resource Sheet* to generate additional questions.

Grades 4-7 extension:

Older students can develop their own version of this game.

Ask students to compare the wolf life cycle with the life cycle of other Yukon mammals or plants that they know about.

Grades 4-7 extensions:

Ask students to predict how wolf and other animal life cycles differ, conduct research on these differences, and present to the class.

Or, ask older students to respond to a deeper inquiry question:

Why are wolf and human life cycles different?

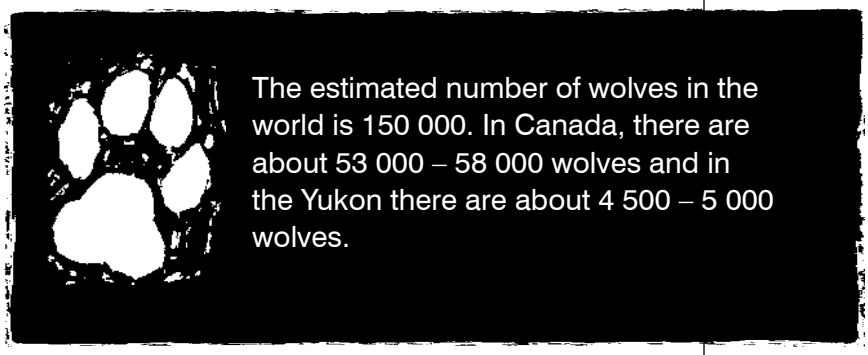
Act out! Go outside and ask students to role-play or play a game of charades in pairs to represent different stages of wolf and human life cycles.

Assessments

1. Ask students to describe four stages in the life cycle of a wolf.
2. Ask students to explain and example of a similarity and a difference between wolf and human life cycles.

Sources:

1. Jeanette McCrie, personal communication.
2. Alaska Department of Fish and Game, *Alaska's Wolves: Activity and Resource Guide*, Fall 1993 (for the drawings)



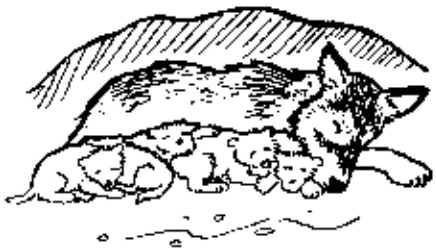
The estimated number of wolves in the world is 150 000. In Canada, there are about 53 000 – 58 000 wolves and in the Yukon there are about 4 500 – 5 000 wolves.

Activity 6: The Life Cycle of Wolves – Student Work Sheet

1. Cut out the drawings.
2. Put them in order to show the life cycle of a wolf.
3. Glue to a piece of paper.

Pups learn to hunt when six months old.

Pregnant female digs den.



Pups born in den.

The average lifespan of wolves is 3 - 4 years.

Dominant pair breeds.

Pups open their eyes when 12 days old.

When one month old, pups fight to determine rank in pack.

Pups learn to walk when two weeks old.

Source for some drawings: Alaska Department of Fish and Game, Fall 1993

INTERMEDIATE UNIT

Grades 4 – 7

Intermediate Unit Introduction:

Grades 4 – 7

This intermediate unit was developed for grade four to grade seven students to build on students' knowledge and understanding of wolves and expand on their critical thinking skills.

Eight Activities

The first activity is an introduction for students to consider their prior knowledge and current perceptions of wolves as well as for students to initiate a portfolio for products from other activities. Activities 2 to 5 focus on biological aspects of wolves along with comparisons with humans and other animals. In Activity 6 students create a wolf mask along with an exploration of Yukon First Nations cultures. Activity 7 focuses on perspectives about the value of wolves and examining issues. **(Please note that Activities 6 and 7 require some preparation in advance of the class session to arrange for guest speakers.)** In Activity 8 students will assume the perspective of stakeholders (human and nonhuman) involved in a human-wildlife conflict and will work together to resolve the issue. This activity is recommended for grades 5 - 8. Each activity can generally be completed in a 30-60 minute session and includes ideas for extension.

ACTIVITY 1: A Wolf Portfolio
ACTIVITY 2: Compare Members of the Dog Family
ACTIVITY 3: Northern Food Webs
ACTIVITY 4: Wolf Communication
ACTIVITY 5: Predator and Prey Game
ACTIVITY 6: Wolf Mask
ACTIVITY 7: The Value of a Wolf
ACTIVITY 8: Canid Council

Curriculum Fit

All activities meet science curricula prescribed learning outcomes outlined in the *Science K-7: Integrated Resource Package 2005* as well as many learning standards for the 2013 draft science curricula as developed by the British Columbia Ministry of Education. Correlation charts to the current 2005 and draft 2013 science curricula links as well as connection notes for English Language Arts, Visual Arts, and Social Studies can be found on the following pages.

Supplementary Activities

See Resources section for additional activity ideas that can be incorporated within multiple curricula areas.

Resource Materials for the Classroom

Apart from the Resource Materials section of this package, there are other resources available for reference. Try your school and/or community library for a file on wolves.

The following resources are available from the YERS in Yukon Education:

- Theme Box: *Wolf Pack,* TB 0111 – non-fiction, a few fiction titles, sound cassettes, and 3 teacher resources (Gr 4-6)
- Theme box: *Wolves*, TB 0069 – picture books, chapter books, novels, non-fiction, a sound recording, a videocassette, and teacher resources (Gr 2-4)
- Video: Death of a legend, VT 0296 – wolf life cycle, pack social organization (Gr 7-12)
- Kit: *Never Cry Wolf*, K 3335 (Gr 7-9)

(Continued)

Materials (continued):

- Kit: *Animal Skulls*, K 3205 – Big horn sheep, black bear, deer, elk (split skull), human and wolf skulls

The following resources may be available from Yukon Environment:

- wolf materials including wolf pelts, skulls, and track casts
- resource people for classroom presentations

Contact the Manager, Environmental Education and Youth Programs, Environment Yukon at 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675 or envirowild@gov.yk.ca.

Available Online:

Internet resources videos such as Hinterland Who's Who "The Wolf" can be retrieved from: **www.hww.ca**/**en**/**multimedia**/**videos**/**mammals.html**

Videos, *Wolf Pack*, *Death of a Legend.* National Film Board Videos.

Retrieved from: **www.nfb.ca**/**film**/**wolf_pack** (for descriptions, see Resources section)

See Resources section for other sample website resources related to wolves.

A Unit Beginning

Divide the students into small groups and give them paper. Ask them to make three categories: *I know, I think*, and *I wonder about wolves..* Give them two minutes to record their responses for each category. Have them report their lists to the class. Alternately this warm-up activity list can be verbally generated. Record all responses on pieces of flip chart paper. Post the class responses in the room to refer to at the end of the unit.

During this unit, encourage students to conduct their own formative assessments related to self, peers, or the general activity. Sample questions could include:

What is going well? What difficulties am I encountering? What could I do differently? Students can also address these types of questions at the end of an activity.

Unit End

Return to the list posted in the Unit Beginning (*I know*, *I think*, and *I wonder)* or the *Activity 1 Introduction Student Work Sheet (Thinking About Wolves)* and have the students add their new knowledge and questions to the list. Have them present *A Wolf Portfolio* (from Activity 1) and share their information with other students. Additional projects that can be incorporated into their portfolios are available in Resources section, Supplementary Activities.

To conclude the unit, ask students to consider some or all of the following questions.

- *What can I do to find out more about the questions that I still have about wolves?*
- *How do my beliefs about wolves affect the way that I act in my community/ecosystem?*
- *How can I use what I have learned to help my community, wildlife, or the local ecosystem?*

Curricula Correlations

Correlations with current B.C. Science curricula (2005)

Key: The Wolf activity… ● strongly reflects all aspects of the learning outcome(s) O reflects part of the learning outcome(s)	1: A Wolf Portfolio	2: Compare members of the Dog Family	3: Northern Food Webs	4: Wolf Communication	5:Predaot & Prey Game	6: Wolf Mask	7. The Value of a Wolf	8. Canid Council
Grade 4								
Life Science: Habitats and Communities								
– compare the structures and behaviours of local animals and plants in different habitats and communities	O	O	●	O	O			●
– analyse simple food chains			●		O			
– demonstrate awareness of the Aboriginal concept of respect for the environment	O					●	O	
– determine how personal choices and actions have environmental consequences								●
Processes and Skills of Science								
– interpreting data & predicting								
Grade 5								
Earth & Space Science: Renewable and Non – Renewable Resources								
– analyse how the Aboriginal concept of interconnectedness of the environment is reflected in responsibility for and caretaking of resources						●	O	
– describe potential environmental impacts of using Yukon's living and non-living resources							O	
Processes and Skills of Science								
– designing & fair testing								
Grade 6								
Life Science: Diversity of Life								
– analyse how different organisms adapt to their environments		O	O	O	O			O

Key: The Wolf activity… ● strongly reflects all aspects of the learning outcome(s) O reflects part of the learning outcome(s)	1: A Wolf Portfolio	2: Compare members of the Dog Family	3: Northern Food Webs	4: Wolf Communication	5:Predaot & Prey Game	6: Wolf Mask	7. The Value of a Wolf	8. Canid Council
– distinguish between life forms as single or multi-celled organisms and belonging to one of five kingdoms: Plantae, Animalia, Monera, Protista, Fungi								
Processes and Skills of Science								
– variables & scientific problem-solving								
Grade 7								
Life Science: Ecosystems								
– analyse the roles of organisms as part of interconnected food webs, populations, communities, and ecosystems	O		O	O	O			●
– assess survival needs and interactions between organisms and the environment	O	O	●	O	●			O
– assess the requirements for sustaining healthy local ecosystems			O		O			
evaluate human impacts on local ecosystems	O		O		O		O	●
Processes and Skills of Science								
– hypothesizing & models								

Wolves Across Curricula

Activities in the Intermediate Unit may also be used to connect with many learning outcomes from the following current curricula:

- English Language Arts: Oral Language, Reading & Viewing, Writing & Representing
- Arts Education –Visual Arts: Creative Processes
- Social Studies: Skills & Processes, Economy & Technology, Human & Physical Environment

Activity 1:

Creating A Wolf Portfolio

Learning Objective

To increase students overall understanding and appreciation of the wolf by expressing their prior knowledge and feelings about wolves, identifying other areas of interest, and reflecting on new content and alternate perspectives

What do I know about wolves?

What are the roles of wolves in their habitat?

What is my role in the care of wolves and Yukon environments?

Summary

Each student will compile an ongoing folder, containing products from this unit as well as other optional activities, to be assembled into *A Wolf Portfolio* at the end of this unit.

Background

Refer to Resources section for reference materials such as *Wolves in Yukon: Fact Sheet.*

Activity Introduction

See *A Unit Beginning* in the Introduction to the Intermediate Unit.

As an alternate or in addition to the Unit Beginning *I know*, *I think*, and *I wonder bout wolves…* warm-up activity, students can complete Activity 1 Student Work Sheet – Thinking About Wolves. It's recommended that the results of these warm-ups be saved for reference and reflection during and upon completion of this unit.

Examine background resources (see Unit Introduction for a full list):

YERS, Wolf theme boxes – *Wolf Pack,* TB 0111, *Wolves*, TB 0069

Yukon Environment Wolf kit

Activity Procedure

1. Explain to students that they will create a portfolio from what they have learned about wolves in this unit.
2. Hand out the folders. Students may wish to design a title page at the start or end of this unit.
3. Ask students to respond to the appropriate inquiry question. Responses could be verbal, drawn, printed, or developed electronically through the creation of a typed document, a poster,

Setting:

Classroom

Materials:

- a folder for each student
- paper
- completed products from other activities in this unit
- optional: items chosen from the *Supplementary Activity Ideas* (in the Resource section)
- school library file on wolves or other photos of wolves
- enough copies of *Activity Reflection Work Sheet* for each student (for each activity selected by the teacher to incorporate)
- enough copies of *Activity 1: Student Work Sheet – Thinking About Wolves* for each student

presentation slide(s), video, or other approved method. Students should develop some record of their initial responses to allow for initial sharing with the class and then for reflection and comparison at the end of the unit.

Gr 4: How are wolves different from other animals? Describe different ways to show respect for the environment.

Gr 5: How do humans affect wolves and Yukon environments? Compare different perspectives on wolves and the environment.

Gr 6: How are wolves adapted to their environment? Explain different ways to deal with issues about wolves and their environment.

Gr 7: How are wolves part of an interconnected ecosystem? In what ways do humans impact wolves and Yukon ecosystems?

4. Explain that as some activities are completed, the activity work sheets will be included in their portfolio folder. As each activity is added to their portfolios, students can also complete a reflection sheet (see *Activity Reflections Work Sheet*). Questions from this work sheet could also be incorporated within an existing student journaling book.

5. The following activity products will be added to the portfolio folder:

    Activity 1: Thinking About Wolves
    Activity 2: Comparing Members of the Dog Family
    Activity 3: Northern Food Web
    Activity 4: Communicating Like a Wolf
    Activity 6: Wolves and Cultures
    Activity 7: Wolf Views

6. At the end of this unit have students compile the papers in their folder to create *A Wolf Portfolio*. Have students design a title page if not already completed. Ask students to return to their inquiry questions and add any new ideas or explain if any of their ideas have changed.

Extensions

1. Ask students question their family or friends in other classes about their inquiry question(s) or Activity 1 questions then share their findings with the class.

2. Complete additional activities for inclusion in their portfolio.

3. Refer to Resources section, Supplementary Activity Ideas for other project recommendations.

4. Ask students to develop their own reflection questions to complete at the end of each activity.

5. Have students display and explain portions of their portfolios and their learning to classmates or other classes.

Activity Reflection Work Sheet

Activity name: _____

Reflection Questions

1. What did I already know about this topic before starting the activity?

2a. What was the most important thing that I learned during this activity?

2b. Why is this learning important?

3. In what way was this activity the same as other activities that I completed?

4. What did I do to help me to figure out this activity?

5. Where can I use what I have learned in this activity?

Activity 1: Student Work Sheet – Thinking About Wolves

1. When I see a wolf, the first thing that I think of is…

_____

_____

_____

2. Are wolves important to Yukon? Why or why not?

_____

_____

_____

3. The things that I already know about wolves are…

_____

_____

_____

4. Questions that I still have about wolves are…

_____

_____

_____

Activity 2:

Compare Members of the Dog Family

Learning Objective

For students to compare characteristics of the wolf, coyote, fox, and the domestic dog and identify wolf adaptations to Yukon

How are wolves different from and similar to other members of the dog family?

What adaptations help a wolf survive in its habitat?

Summary

Using reference material, students will discuss, research, then complete a chart comparing the wolf, coyote and fox.

Background

A coyote is often confused with a wolf. Both are members of the dog family, Canidae, as is the red fox. Some characteristics of the dog family are:

- a long muzzle
- teeth designed for grabbing, tearing/shearing and chewing flesh
- a variety of body sizes from the small fennec fox to the wolf
- depend heavily on sight
- have exceptionally good smelling and hearing capacities
- large bushy tails and erect ears for communication

Additional mammal references

- Yukon Environment, Yukon Mammals, **www.env.gov.yk.ca/animals-habitat/mammals**
- Canadian Museum of Nature, Natural History Notebooks, Mammals: n**ature.ca/notebooks/english/mammpg.htm**
- Hinterland Who's Who, Mammals, **www.hww.ca/en/wildlife/mammals**

Taxonomy sources:

- Convention on Biological Diversity, **www.cbd.int/gti/taxonomy.shtml**

Setting:

Classroom

Materials:

- resources on wolves, coyotes and foxes for classroom display
- *Activity2: Student Work Sheet* and *Activity 2: Resource Sheet* (in the Student Resource and Work Sheet section of this unit)
- *Wolves in Yukon: Fact Sheet* (in the Resource Materials section of this package)
- optional: a field guide to mammals

- Museum of Zoology, University of Michigan, Animal Diversity Web, classification, **animaldiversity.ummz.umich.edu/animal_names/phylogeny_ranks**

(also information about Kingdom Animalia, **animaldiversity.ummz.umich.edu/accounts/Animalia**)

Activity Introduction

1. With students, brainstorm some characteristics of the dog family.
2. Have students work in pairs to explore the resource material in the classroom. Give them five minutes to find information on characteristics of the dog family.
3. Discuss their findings and add to the brainstorm list.

Activity Procedure

1. Divide the students into groups of three. Assign a member of the dog family, either a *red fox*, a *coyote,* or a *wolf* to each of the three groups. Add a fourth group, *domestic dog*, if the class size is large enough.
2. Distribute a copy of the first page of *Activity 2: Student Work Sheet* and assign a different dog family animal to each student. If there are four groups, use the second version of the Activity 2: Student Work Sheet that includes column for the domestic (tame) dog.
3. Give each group fifteen minutes to collect information about their member of the dog family, using available resource materials (including those in this package), computer lab, and library information. They may choose to assign members of the group a specific category to research. Ask them also to collect examples of drawings and photographs. Have them record the information and make a simple display of their materials in an assigned corner of the room.
4. Have each group give a five-minute presentation about their animal.
5. Hand out a copy of *Activity 2: Resource Sheet* to each group and ask them to compare their findings with the sheet. Do they agree or disagree?
6. Ask the students to now work individually, and add to their copy of *Activity 2: Student Work Sheet* and answer the related work sheet questions. *Teacher Answer Sheet* provided.
7. Discuss differences/similarities of wild canines to domestic dogs. If only three groups were used, allow students to add to their Dog Family chart with information about domestic dogs.
8. Have students put the work sheets in *A Wolf Portfolio.*

Sources:

1. Broderick, Mary Lee Yukon Environmental Handbook, Part Two: Fall and Spring Activities, A Yukon Teacher's Activity Handbook to accompany "Exploring Science" (Tied Book) Grade Six Level, Yukon Conservation Society 1985
2. Zarki, Joseph W Getting to know the Wolf: A Teacher's Guide to the "Wolf-Pac" Materials, A School Outreach Project of the National Park Service, Yellowstone Association for Natural Science, history, and Education, Inc. 1989

Extensions

1. Have students complete an *Activity Reflection Work Sheet* (See Activity 1 for a copy of the handout)
2. Ask a resource person from the Yukon Environment Department give a presentation on the wolf, coyote, and red fox.
3. Conduct a research project to examine adaptive changes in the wolf or in other members of the dog family and link with evidence in fossil records.
4. Have students research the classification of animals from difference perspectives (taxonomy, First Nations, other cultures) and present their findings to the class.
5. Have students research and compare the dog family (Canidae) with other families (e.g., cats – Felidae, bears – Ursidae, weasels – Mustelidae).

Possible reference websites include:

a-z-animals.com/reference/animal-classification

Grade 5-6 extension: Compare the respiratory, digestive, circulatory, skeletal, muscular, and nervous body systems of a wolf to that of a human. Or, design an experiment to use what you know about human body systems to investigate a wolf's body systems.

Assessments

1. Give each student a blank copy of *Activity 2: Student Work Sheet* to complete.
2. Re-group students so that one member of each of wolf, coyote, and red fox are in a new group. Have each student summarize or re-teach characteristics of their animal within this new grouping. Students can then complete a self and/or peer assessment of their contributions to the new group or create a related reflection in a journal or *A Wolf Portfolio*. See the "Student Self-Assessment" sheet in the Resources section.
3. Students can form new groups and teach another class about a different assigned animal or each of the 3-4 members of the dog family.
4. Have students write their own quiz questions and then administer to the group.

The oldest recorded wolf age in Yukon is thirteen years, though an average lifespan is only three or four years. Death may result from injuries during hunting interactions with prey, fights with other wolves, starvation, or human-related causes such as hunting or trapping. The most common form of death is death by other wolves.

Activity 2: Student Work Sheet – Comparing Members of the Dog Family

	COYOTE	WOLF	RED FOX
Size (give weight and assign a ranking of order for smallest to largest)			
Age of Maturity			
# of young/year			
Mating season			
Time of birth			
Social Organization (Names of adults & young)			
Food			
Tracks (draw or explain)			

Activity 2: Student Work Sheet – Comparing Members of the Dog Family

	COYOTE	WOLF	RED FOX	DOMESTIC DOG
Size (give weight and assign a ranking of order for smallest to largest)				
Age of Maturity				
# of young/year				
Mating season				
Time of birth				
Social Organization (Names of adults & young)				
Food				
Tracks (draw or explain)				

Activity 2: Student Work Sheet – Comparing Members of the Dog Family

1.Compare your information about the coyote, wolf, and red fox.

a. Name 2 similarities among these members of the dog family:

_____

_____

_____

_____

b. Name 2 differences among these members of the dog family?

_____

_____

_____

_____

2. Based on your knowledge of wolves and domestic dogs, what are some of the differences between these two animals?

_____

_____

_____

_____

3. Describe at least 2 adaptations of wolves that help it survive in Yukon.

_____

_____

_____

_____

4. Have you ever had an experience with a wolf, coyote or fox? Did you see the animal? Tracks? Describe the experience and how it made you feel.

_____

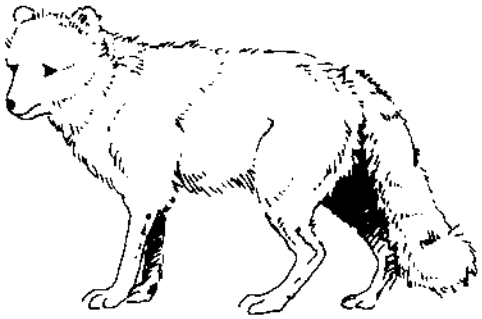
_____

_____

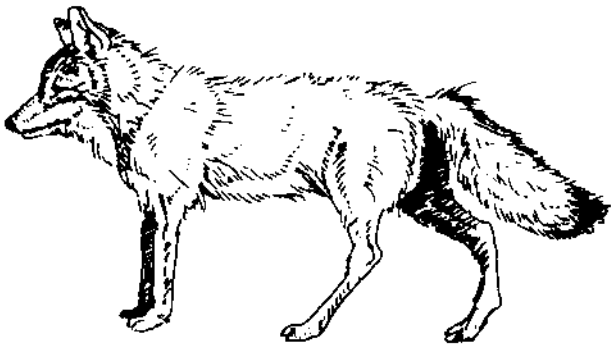
_____

Activity 2: Information Page – Dog Family

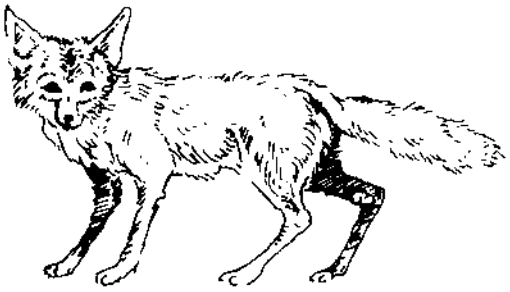
Red fox



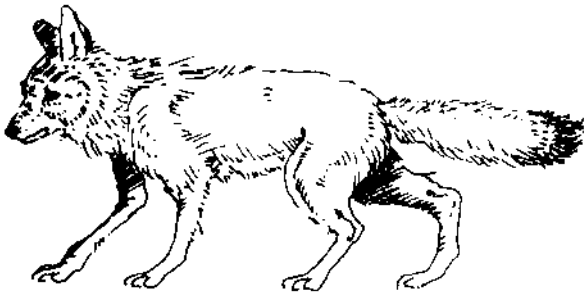
Arctic fox



Gray fox

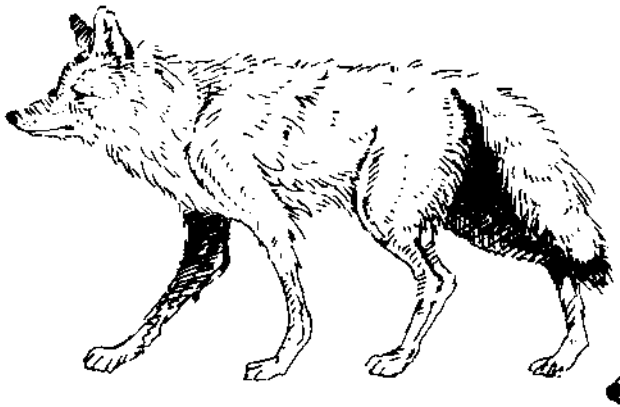


Kit fox

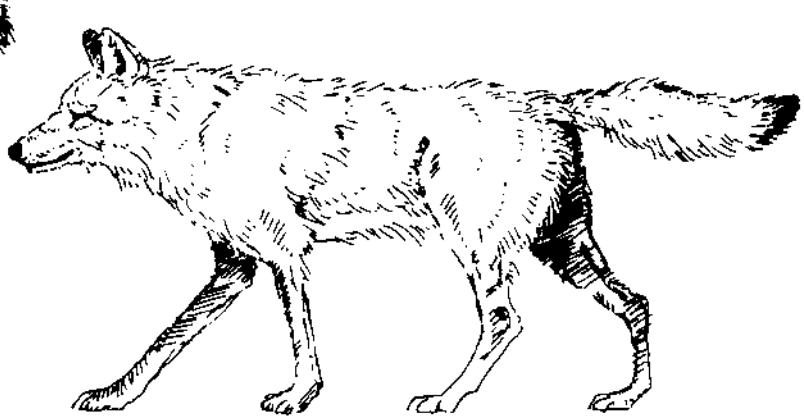


Swift fox

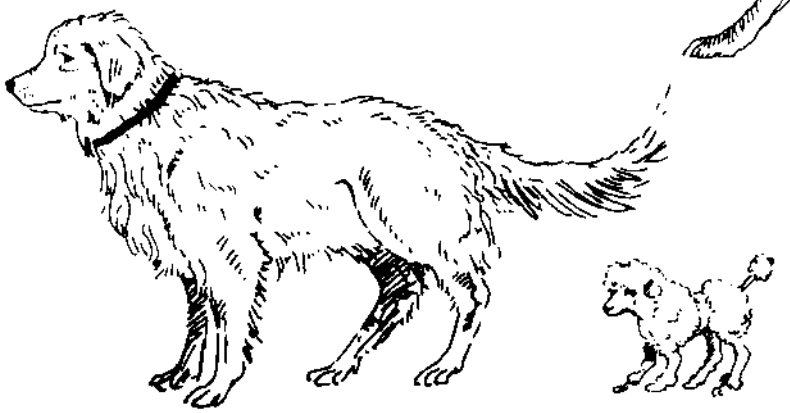
Activity 2: Information Page



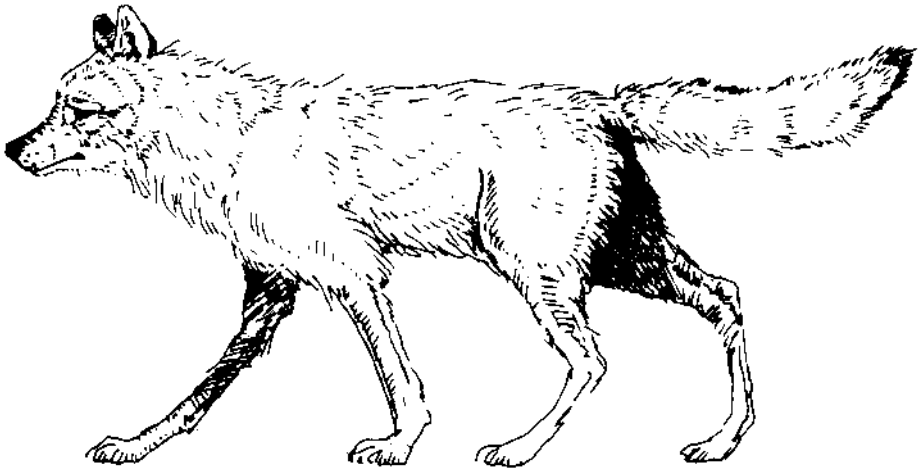
Coyote



Red wolf



Dog (golden retriever, toy poodle)



Gray wolf

Activity 2: Student Resource Sheet – Dog Family

	COYOTE	WOLF	RED FOX	DOMESTIC DOG
Size	3.2 kg (29 lbs)	M: 38.6 - 54.5 kg (85 - 120 lbs) F: 25 - 36.4 kg (55 - 80 lbs)	3.6 - 6.8 kg (8 - 15 lbs)	1 - 79 kg (3 - 175 lbs)
Age of Maturity	2 years	2 years	10 months	1 - 2 years
# of young/year	5 - 10	5 -10	1 - 10 usually 5	1 - 12
Mating season	Late January to late March	March	December to March	No defined mating season
Time of birth	Late April to early June	May	April to May	Approximately 2 month gestation
Social Organization (Names of adults & young)	Family pack: dog bitch pup	Pack: dog bitch pup	Family (spring & summer) Solitary (autumn & early winter): dog; vixen; pup	Family pack: dog bitch pup
Food	Mostly small mammals, particularily hares and mice as well as carrion	Large mammals: moose, caribou, mountain sheep Small mammals: hares, ground squirrels, etc.	Small mammals: mice, hares, squirrels, etc. Birds: ducks, grouse Insects, plants & berries	Dry dog food, wet dog food, raw meat, human scraps
Tracks (draw or explain)	Outer two pads are larger than the front two. 	Very large print. Overall track pattern efficient, no wandering. 	Very tiny pad print. 	Variety of sizes. Overall track pattern shows wandering. 

Activity 2: Teacher Answer Sheet – Comparing Members of the Dog Family

1.Compare your information about the coyote, wolf, and red fox.

a. Name 2 similarities among these members of the dog family?

- All have tails, paws and fur.
- All have teeth for eating meat.
- All are very intelligent and secretive.
- All have very astute senses (hearing, sight, smell).
- All have pups in the spring.
- All use dens.

b. Name 2 differences among these members of the dog family?

- Coyote and fox are much smaller than wolves.
- Coyote and fox are mostly solitary.
- Wolves are social operating as a pack (family unit).
- Wolves are much stronger and kill large prey like moose and caribou.
- Fox and coyotes are more likely to scavenge and rarely kill large ungulates.
- Fox and coyote are very adaptable to survive in urban environments feeding on human scrapes and garbage.

2. Based on your knowledge of wolves and domestic dogs, what are some of the differences between these two animals?

- Wolves are wild and cannot be trained or domesticated like dogs.
- Wolves are generally bigger than most dog breeds.
- Wolves support themselves by hunting and scavenging for food, most dogs would die if not care for by the owners.
- Wolves are stronger and better adapted to survival in the wild
- Wolves are very efficient when they travel. Wolves walk most of the time and travel in straight lines to reduce energy loss. Dogs will run around using up lots of energy, generally with the knowledge that they will be getting a bowl of food at the end of the day.

3. Describe at least 2 adaptations of the wolf that help it survive in the Yukon.

- Paws – big, hairy, work like snowshoes
- Fur – change coats based on the season. Have very thick winter coats. Shed to lighter summer coats.
- Tail – When curled up the tail protects the exposed tip of the nose from the cold.
- Teeth – Large canines for biting and holding prey in the hunt. Sharp incisors for slicing meat off the bone.
- Pack – Living in a pack allows wolves to work as a unit. Similar to a human community, they share the work and the food.
- Long spender legs and narrow chests for efficiency when walking though deep snow. Wolves will also follow each other, stepping in the same foot steps to save energy in the deep snow.

Setting:

Classroom

Materials:

- resource material on wolves for classroom display
- crayons, coloured pencils, or markers (red, green and yellow)
- enough copies of the *Activity 3: Student Work Sheet* for each student
- "How Wolves Change Rivers" short film, available for the class to watch at **www.filmsforaction.org/watch/how-wolves-change-rivers**

Activity 3:

Northern Food Webs

Learning Objective

For students to investigate a northern food web by comparing the roles of producers, consumers, and decomposers and identifying where wolves and humans fit in a food web

In what ways are wolves and humans similar within northern food webs? How are they different?

Summary

Students will identify producers, consumers and decomposers on a work sheet.

Background

Food webs are interlocking patterns of food chains. Food chains consist of the transfer of energy from one set of animals and organisms to another. For example, moose eat willows and wolves eat moose.

Activity Introduction

1. Display the short film "How Wolves Change Rivers" for the class.
2. Review food webs and food chains with students. Ask them to provide examples of food chains.
3. Ask students to share their prior knowledge about producers, consumers, and decomposers.
4. Review the vocabulary words:

   producer – creates food by using the sun's energy, carbon dioxide from the air and decomposed soil nutrients. All forms of plant life are producers.

   consumer – obtains food by eating plants or animals. Mice, hares, wolves, owls, fish and humans are examples of consumers.

   decomposer – obtains food by eating dead producers and consumers and recycles dead materials into the soil for plants. Decomposers are bacteria, fungi, and insects.

Activity Procedure

1. Give each student a copy of the *Activity 3: Student Work Sheet*
2. On the work sheet identify each of the living organisms with students.
3. Ask students to locate the producers, consumers and decomposers. Have them identify each organism with a different colour or a capital letter (P = producer, C = consumer, D = decomposer).
4. Ask students to find the food chain that includes soil, lichen, caribou and wolf. Have them colour the connections in this food chain red. Identify producers, consumers and decomposers in this chain.
5. Have students connect dashed lines on the work sheet using a green pencil to show the direction of energy and nutrient flow through the food web. Also colour heads of arrows green.
6. Have students connect dotted lines on the work sheet using a yellow pencil to show how nutrients are returned to the food chain.
7. Ask these questions:

   What is the source of energy used by producers?

   Which animals do wolves eat?

   Which animals eat wolves?

   What would happen if caribou were missing from the web?

   What would happen if wolves were missing from the web?

   How is the role of an insect different from the role of a plant, the role of a caribou, and the role of a wolf?

   What role do humans play in this food web?

   Alternatively, students can complete these questions using the *Activity 3: Northern Food Webs Questions* sheet and add this to a Wolf Portfolio.

Additional questions for older students:

Grade 6: What tools could we use to examine small decomposers like bacteria, fungi, and insects? What is one different adaptation of a producer, consumer, and decomposer? Which kingdoms are represented in this northern food web?

Grade 7: How are populations, communities, and ecosystems related to a food web? Provide one example of a human impact on producers, consumer, and decomposer.

Sources:

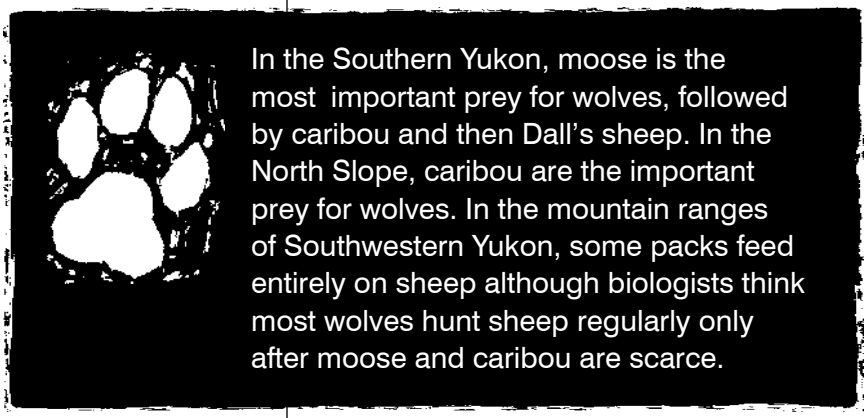
Adapted from Activity Package #3, pages 15-16, Yukon Environmental Handbook, Part One: Small Winter Life (A Yukon Teacher's Activity handbook to Accompany Exploring Science Green Book), revised 1990.

Extensions

1. Have students complete an *Activity Reflection Work Sheet* (See Activity 1 for a copy of the handout)
2. Divide students into small groups and give each group a large piece of paper. Have them create a food web that focuses on wolves.
3. Older students could research various contaminants or diseases that affect Yukon wildlife. See Environment Yukon for more information (**www.env.gov.yk.ca**/**animals-habitat**/**wildlifediseases**)
4. Students could create a play, write a story, or design a poster depicting a Yukon food web and the interactions among producers, consumers, and decomposers.

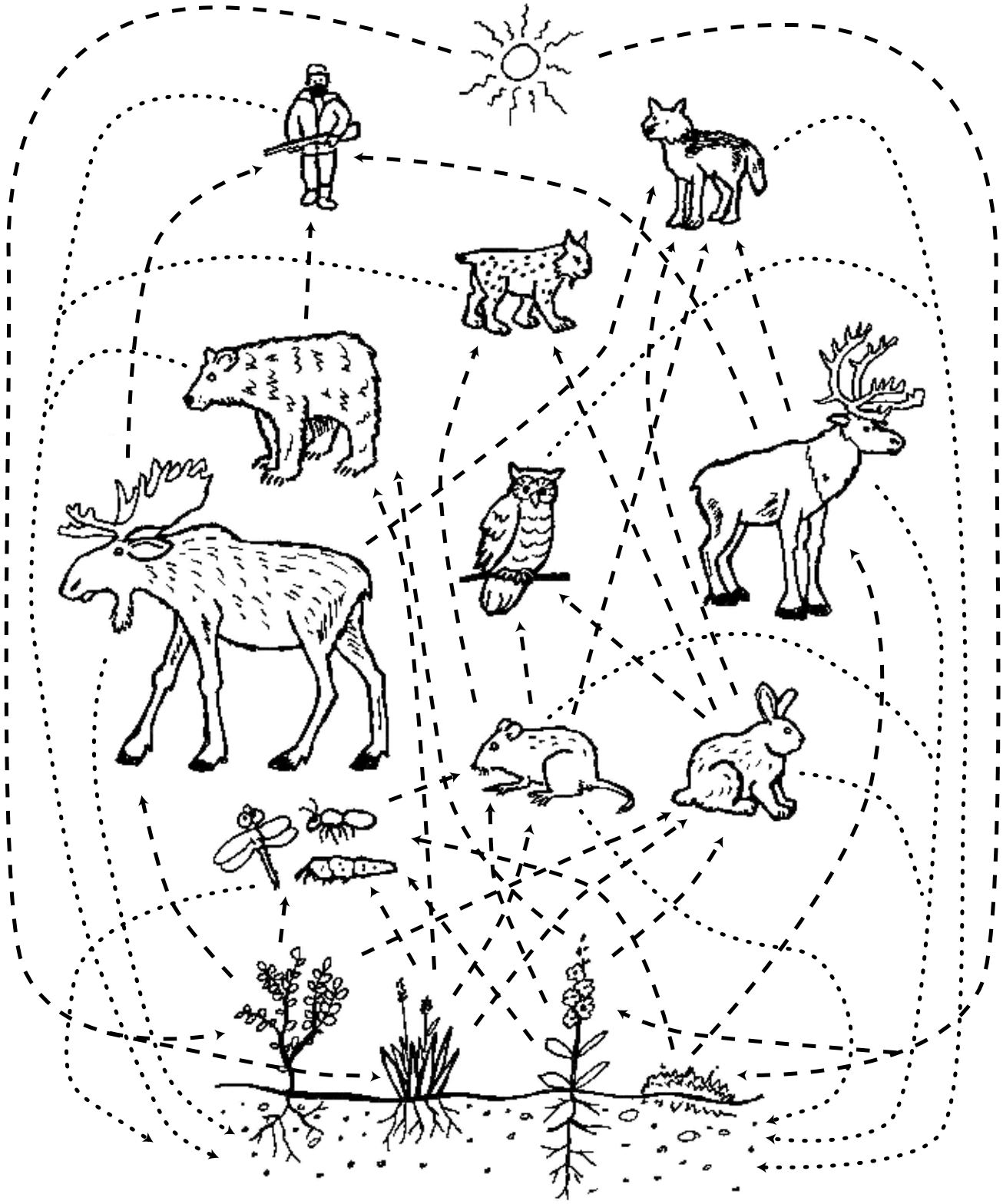
Assessments

1. Ask students to give definitions and provide an example of a producer, consumer, and decomposer.
2. Ask students to list three animals a wolf eats.
3. Ask students to reflect and suggest how changes to one organism in a food web can affect another organism or the entire food web. Students may use a specific example from their experiences as an example (e.g., winter ticks cause several elk to die in areas of southern Yukon, less plant material is available for snowshoe hares to eat).



In the Southern Yukon, moose is the most important prey for wolves, followed by caribou and then Dall's sheep. In the North Slope, caribou are the important prey for wolves. In the mountain ranges of Southwestern Yukon, some packs feed entirely on sheep although biologists think most wolves hunt sheep regularly only after moose and caribou are scarce.

Activity 3: Northern Food Webs – Student Activity Sheet



Decomposers break down all these organisms releasing nutrients.

Activity 3: Northern Food Webs – Questions

1. What is the source of energy used by the producers in this food web?

2. Which animals do wolves eat?

3. Which animals eat wolves?

4. What would happen if caribou were missing from the web?

5. What would happen if wolves were missing from the web?

6. How is the role of an insect different from the role of a plant, the role of a caribou, and the role of a wolf?

7. What role do humans play in this food web?

Activity 4:

Wolf Communication

Learning Objective

To enhance student understanding of the processes and importance of communication among wolves

How do the types of communication that humans use compare with the types of communication that wolves use?

Why is communication important for wolves?

Summary

Students will use flash cards of wolf expressions and postures to understand how wolves communicate and compare the characteristics of wolf and human communication.

Background

Wolves have a highly developed social organization within their packs. Every member has its place. The dominant pair has the highest ranking in a pack. Subordinate members have variable lower rankings ranging from a male and female that rank just below the dominant pair to pups and sometimes a 'scapegoat'. This social order changes as pups mature and integrate into the pack and as other members disperse or die. To maintain social order, wolves depend on communication — a means of verbal, auditory, and olfactory cues as well as facial expressions and body postures.

Activity Introduction

Show the video *Wolf Pack* or show pictures of wolves communicating a message through facial expression or body posture and discuss. Ask students to provide examples or role-play examples of human communication scenarios (include examples of happy, angry, scared/ aggressive, and shy situations).

Activity Procedure

1. Ask five students to cut *Activity 4: Student Work Sheet* into flash cards, while you divide the class into groups or 'packs' of five.
2. Hand each 'pack' a set of cards to be distributed among members.
3. Have students show each card one at a time to other members of the 'pack' who will identify the message that expression or body posture communicates.
4. When the message is correctly identified, an appropriate response is shown.

Setting:

Classroom

Materials:

- five copies of Activity 4: Student Work Sheet
- five pairs of scissors
- optional: the video *Wolf Pack (*YERS: VT 029)
- enough copies of Activity 4: Student Work Sheet – Communicating Like a Wolf for all students

Source:

Adapted from Zarki, Joseph W. Getting to know the Wolf: A Teacher's Guide to the "Wolf-Pac" Materials, A School Outreach Project of the National Park Service.

For example someone holds up a card that shows a wolf in a submissive posture, the message is identified and then, in response, a 'pack' member holds up a card that shows a wolf in a dominance posture.

5. Have students return to their desks with their cards. Call out a specific message and ask for students to hold up the cards that communicate that message. For example:
    - a young wolf approaches the dominant female
    - the dominant male approaches a low ranking male
    - two wolves play wrestle
    - a dominant male approaches a high ranking male when feeding on a kill
    - a high ranking female shows aggression towards a lower ranking female
6. Brainstorm situations or reasons for wolf communication (e.g., danger or prey nearby, play-training for young pups, competition for mates, etc.). Have students complete the *Activity 4: Student Work Sheet – Communicating Like a Wolf* and add it to *A Wolf Portfolio*.

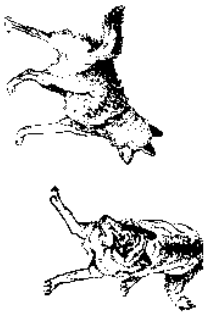
Extensions

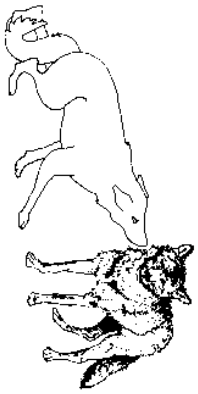
1. Have students complete an *Activity Reflection Work Sheet* (See Activity 1 for a copy of the handout)
2. Have students work in pairs to explore pictorial resource materials in the classroom. Give them five minutes to find pictures of wolves communicating a message. Have them share the results of their findings with another pair.

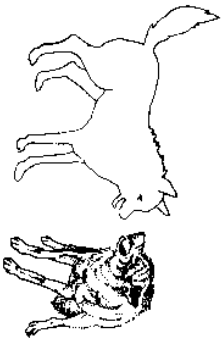
Assessments

1. Ask students to describe three ways a wolf can communicate a message and explain the reason for or importance of each type of communication.
2. Students will compare a wolf and human example of aggressive, submissive, social, and neutral behaviours.

Seven to nine wolves is the average pack size in the Yukon. The largest pack size seen by biologists is thirty-nine wolves and can probably be attributed to a short term merging of two packs







THREAT (Aggressive behavior) Dominant wolf snarls with raised lips; tail raised, ears forward. Often done in combination with many other aggressive behaviors. Purpose: An expression of tension, usually occurs when two wolves are close to one another, such as when feeding on a kill.	**FUR SNIFFING** (Neutral behavior) One wolf walks up to another wolf; pushes its nose into the other's fur and then walks on. Purpose: Helps to strengthen bonds among pack members.	**FACE LICKING** (Passive submission) A low ranking wolf approaches a higher ranking wolf with a crouched posture, tail tucked down between the legs, and licks the other animal on the muzzle. Purpose: To show submission, helps to promote harmony in the pack and reduce aggression.	**PLAY BOW** (Social behavior) One wolf approaches another in a non-threatening manner, bows down with front legs spread wide, runs away in a playful manner. (Many dogs show this behavior.) Purpose: An invitation to play. Play helps to strengthen muscles and coordination in young animals and also helps to reduce tension within the pack.
IMPOSING (Aggressive behavior) Stiff-legged walk toward another wolf; tail held up and rigid; dominant wolf "stares" at opponent and may growl. Dominant wolf may push or shove the other animal. Purpose: To show dominance; helps establish pack social order.	**NOSE TOUCHING** (Neutral behavior) Two wolves stand side-by-side and briefly touch noses. Purpose: Helps to strengthen bonds among pack members.	**LYING ON BACK** (Active submission) A low ranking wolf falls or lies on its back with one slightly raised hind leg in front of a dominant wolf. Purpose: To show submission; helps to reduce immediate threat of aggression from another more dominant pack member.	**PLAY WRESTLING** (Social behavior) Lots of physical contact, play wrestling, play biting, play growling, play running... all in good fun. Purpose: Play helps to strengthen muscles and coordination in young animals and also helps to reduce tension within the pack.

Activity 4: Student Work Sheet – Communicating Like a Wolf

1. Provide an example for the following wolf and human behaviours.

Behaviour	Wolf example	Human example
Aggressive		
Submissive		
Social		
Neutral		

2. What do you think is the most important communication that wolves use? Why?

Setting:

Gym or large outdoor area

Materials:

- resource material on wolves for classroom display
- food tokens (pieces of card paper), enough for three for every student
- coloured vests/pinnies to mark predators
- tails to mark prey (nylon stockings)
- four hula hoops

Activity 5:

A Predator and Prey Game

Learning Objective

To increase student understanding of the concepts of predator and prey and the roles of wolves as a predator

In what way are predator and prey animals related? (as in a food web)

What roles or adaptations help predators and prey survive in the environment?

Summary

Students will play an active version of freeze tag.

Background

Animals have a variety of behaviours in predator/prey relationships, which are adaptations for survival. The adaptations of some prey in response to the presence of predators are: running hard, signaling to others, flight, posturing in an aggressive posture, running as a group and 'freezing' on the spot to escape detection.

Teacher note: This activity was adapted from "Quick Frozen Critters", p 147, *Project WILD: Activity Guide*, Canadian Wildlife Federation, Western Regional Environmental Education Council, 1995. For information about other Project WILD activities, contact: Manager, Environmental Education and Youth Programs, Environment Yukon, Phone: 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675, Fax: 867-393-6206, Email: envirowild@gov.yk.ca.

Activity Introduction

1. Review the vocabulary words:

   predator – a wolf is a predator because it hunts, kills and feeds on other animals (such as moose, Dall sheep and caribou).

   prey – the animal the wolf hunts, kills and feeds on is called prey.

   adaptations – are the adjustments of animals to their environment and in response to other animals.

2. Have students work in pairs to explore the resource material in the classroom or to explore online resources (see list in Resources section). Give them five to ten minutes to find the primary prey species of wolves and behaviours exhibited by their prey and predator during the hunt.

3. Discuss their results.

Activity Procedure

1. Take students to the game site and identify boundaries. Designate students as either wolves or caribou – with about one wolf for every four to six caribou. Have wolves wear gym vests and caribou tuck tails in the back of their pants.

2. Identify one end of the field as 'food', where food tokens are placed, and the other end as 'shelter'. Randomly place four hula hoops between the two ends and identify them as additional 'cover' or 'shelter' for prey.

3. Outline the game. Starting at 'shelter', the caribou must retrieve one food token at a time from 'food' and then return to 'shelter' before returning to get another food token. To avoid being caught by wolves in-between the two ends they can stand in the hula hoop. To capture caribou, wolves must grab their tails. When captured, caribou go to the sidelines. Caribou need three tokens to survive and wolves need two caribou to survive. Start the game.

4. After five minutes, stop the game and bring students in. Ask them the results – how many prey were eaten?, how many prey survived?, how many wolves survived?, how did caribou avoid capture? (running hard, running as a group), how did the wolves most effectively capture caribou?

5. Play another two rounds of the game, allowing each student to be a prey and a predator. Discuss the results of each round.

Extensions

1. Have students complete an *Activity Reflection Work Sheet* (See Activity 1 for a copy of the handout)

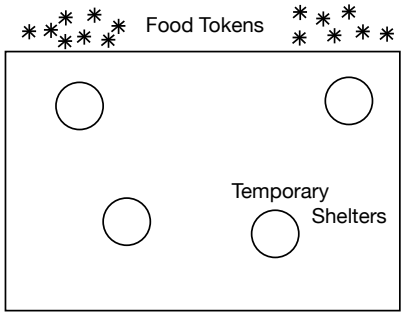
2. Play the game for three rounds, recording the number of captures each time. Students who were captured become caribou again and caribou not getting their three food tokens become wolves in the succeeding round. Discuss the results of each round and relate the results to fluctuations in populations.

Assessments

1. Ask students to describe the terms: *prey, predator* and *adaptations* and give an example of each.

2. Discuss in small groups or ask students to write a reflection about:

   How do humans affect predator and prey animals in Yukon ecosystems?



Schematic of initial game positions

Source:

Adapted from "Quick Frozen Critters" p. 147-149, *Project WILD Activity Guide*

Setting:

Classroom

Materials:

- resource material on wolves and Yukon First Nations
- construction paper for masks
- crayons, coloured pencils, markers, or paint
- scissors
- glue, stapler, and string if students will wear masks
- enough copies of Activity 6: Student Work Sheet – Wolves and Cultures for each student

Activity 6:

Wolf Mask

Learning Objective

To increase students overall understanding and appreciation wolves in Yukon First Nations culture

How do different Yukon First Nation cultures portray their understandings about wolves?

Summary

Students will learn about Yukon First Nations cultures and the roles of wolves in their history, traditions, art, and daily life and then create their own wolf mask.

Background

Refer to Yukon First Nations resources, such as *A Handbook of Yukon First Nations Education Resources for Public Schools*, for information about the 14 First Nations in Yukon, languages, traditional territories, and education strategies.

This handbook and other resources are available through Yukon Education, **www.yesnet.yk.ca/firstnations**

Social Organization on page 18 includes information about the Wolf and Crow Clans, the basis of traditional Yukon First Nation social and political organization.

Also, see the Council of Yukon First Nations (cyfn.ca) and contact your Community Education Liaison Coordinator for information and to coordinate a class visit from local First Nations members.

Available at the YERS:

Kit: *Yukon First Nations clans*, K3839 (also, see the Grade 5 Social Studies booklet "Yukon First Nations Clans")

Activity Introduction

Ask students: *What can we learn about wolves from different generations? What can we learn from people with different cultural backgrounds?* If time, students can ask their family members about their beliefs about these questions in relation to wolves and then share with the class.

Activity Procedure

1. Arrange for community members from different Yukon First Nations to visit the class and share their perceptions about wolves including their

role in their history, stories, and art. If students will also be completing Activity 7, select different groups for Activities 6 and 7 to provide students with a range of viewpoints or perspectives.

2. Ask students to create their own wolf mask that represents their own beliefs or values about wolves (drawing, paper mache, computer design, etc.). While completing their design and final product, have students write a brief summary of any culture that influence their design on the *Activity 6: Student Work Sheet – Wolves and Cultures* and add this sheet to *A Wolf Portfolio*.

3. Have students share their mask and the culture(s) that shaped their design with the class and then display the masks and summary at school or in a local community centre.

Extensions

1. Have students complete an *Activity Reflection Work Sheet* (See Activity 1 for a copy of the handout).

2. Students can answer the following additional reflection question verbally, in journals, or as an addition to their portfolios.

   How do my beliefs affect the way that I think about wolves and the environment?

3. Students can develop a role-playing activity where they act out the characteristics of wolves that they have represented in their masks.

4. Consider other Yukon cultures. Ask students to research another Yukon culture or ethnic group and create a second mask or edit their existing design (e.g., German, Filipino, Spanish, Dutch, Chinese, English, French, etc.)

5. Compare the representation of wolves in various media (e.g., books, movies) with your current knowledge of wolves and create a poster, presentation, or drawing to represent your findings.

Assessments

1. Students will participate respectfully during guest visits.

2. Students will identify one way that wolves are represented in Yukon First Nations cultures.

3. Students will explain any cultural influences on the design of their own wolf masks.

Sample Wolf mask template sources:

www.wolf.org/learn/wild-kids/wolf-mask

www.itsybitsyfun.com/uploads/9/8/7/6/9876061/wolf-mask.pdf

Activity 6: Wolves and Cultures Worksheet

a. List two examples of how wolves are represented in a Yukon First Nation culture.

Wolf Mask Design

b. Explain how you developed your wolf mask design. What cultures or other factors influenced the wolf mask that you created?

Activity 7:

The Value of a Wolf

Learning Objective

To make students aware of different perspectives people have of wolves as well as examples of specific points of view such as technological, scientific, ecological, economic, and political approaches to issues.

Are wolves important to Yukon? Why or why not?

What are three different perspectives about wolves in Yukon?

How do I evaluate different perspectives about wolves and wolf management issues?

Summary

Students will discuss the question "What is the value of a wolf?" then answer it themselves. Guests will come to the class to give their perspectives on the question.

Background

Different people have different perspectives on the value of wolves. These perspectives must be understood to effectively manage wolves and our environment.

Examples of specific perspective approaches include:

- *scientific:* focuses on research to explain natural phenomena (e.g., research regarding the sources of contaminants in a local ecosystem)
- *technological:* focuses on the development of a product or process for use in society (e.g., use of measurement tools to quantify different contaminants in an ecosystem)
- *ecological:* focuses on interactions between living organisms and the non-living components of their environment (e.g., research regarding the effects of specific contaminants on plants and animals – including humans)
- *economic:* focuses on financial aspects of production, distribution, or consumption (e.g., the financial cost of cleaning up contaminants, the cost of dealing with any damage caused by contaminants)
- *political:* focuses on actions by or processed of government (e.g., laws to control release of contaminants into the environment from human industries)

Setting:

Classroom

Materials:

- enough copies of Activity 6: Student Work Sheet – Wolf Views for each student
- 2 copies of Yukon Wolf Conservation and Management Plan (Resources Section)

- *cultural:* focuses on the beliefs, values, attitudes, norms, and ideas that relate to a specific group of people (e.g., First Nations traditional knowledge about healthy animal populations and ecosystems)

Teacher Preparation

This activity includes a panel discussion with guests. These guests should represent different perspectives, such as:

- a trapper (contact the Yukon Trapper's Association, 867-667-7091, yukonfur@yknet.ca, Trapper Education Coordinator at Yukon Environment 867-667-5568, or the Yukon Fish & Game Association, 867-667 – 4263, yfga@klondiker.com; **www.yukonfga.ca/support/yukon-trappers-association**)
- a First Nations person (contact the Community Education Liaison Coordinator in your school)
- a biologist (contact the Manager, Environmental Education and Youth Programs, Environment Yukon at 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675 or envirowild@gov.yk.ca.
- a concerned citizen to deal with ethical perspectives of the value of wolves (contact the Yukon Conservation Society at 867-668-5678 or ycs@yk.ca, **www.yukonconservation.org**)
- a local town council member

Organize the guest speakers at least a week in advance. Let them know they will be asked to give a three minutes answer to the question 'What is the value of wolves?'. Explain that students will have one or two prepared questions for them and that there will be a five-minute question period at the end. This panel discussion should be about 20 minutes.

Activity Introduction

1. Write "What is the value of a wolf?" on the board. Ask students to define values and beliefs. Discuss.
2. Hand out *Activity 7: Student Work Sheet – Wolf Views* and have students answer question #1.
3. Ask students to share their answers. Explain that different people have different perspectives on the value of a wolf. A trapper would have an economic perspective; a biologist, a scientific and ecological perspective; a concerned citizen could have an ethical or ecological perspective, a council representative could have an economic and political perspective, and a First Nations person, a cultural perspective.
4. Divide the class into five groups. Four of the groups receive a copy of a resource sheet and a piece of paper. Give the other group *Yukon*

Sources:

Buck, Rosemary and Grace Snider. Wolf (Agay) Unit Plan for Grade 7/8; Integrating Language Arts, Social Studies, and Science. St. Elias Community School, May 1994.

Staniforth, S. (2004). *Leap Into Action! Simple Steps to Environmental Action*. British Columbia: BC Conservation Foundation and Wild BC.

Wolves: Ecology and Management Issues and ask them to review pages 2, 6 and 7. Give all groups a short time to study, take notes and then give a two-minute report to the class.

5. Return to the question on the board "What is the value of a wolf?" and ask students to answer from an economic perspective, a scientific or ecological perspective, a political, perspective, and a cultural perspective. Return to the activity inquiry questions and ask students to respond verbally or on paper (that can be added to *A Wolf Portfolio*).

Activity Procedure

1. Ask students to return to their six groups and prepare two questions to be directed at two different guests.
2. Prepare the room for the guests with their chairs in front of the six groups.
3. When the guests arrive, introduce them to the class and explain your role as facilitator: keeping guest speeches to three minutes, directing students prepared questions and monitoring the five minute question period at the end.
4. Conduct the panel discussion.
5. After guests have been thanked and have left, have students complete #2 and #3 on *Activity 6: Student Work Sheet*.
6. Have them share their thoughts and then reflect on how they developed their opinions about wolves.

Assessments

1. Include *Activity 7: Student Work Sheet – Wolf Views* in the Wolf Portfolio.

   Have students conduct a survey to answer the questions "What is the value of a wolf?" Have them choose three people – family, friends, teachers to survey.
2. Ask students to describe three different perspectives on the value of wolves.

Extensions

1. Have students complete an *Activity Reflection Work Sheet* (See Activity 1 for a copy of the handout).
2. Ask students to explore other local environmental issues of interest to them using the *Activity 6: Student Work Sheet – Identifying Issues*.
3. Explore the concept of management of nature or wildlife from different cultural perspectives through guest visitors to the class or student research within their own families and community.

4. Have students research and develop recommendations for any changes to the Yukon Wolf Conservation and Management Plan and submit these to Yukon Environment. Contact the Manager, Environmental Education and Youth Programs, Environment Yukon at 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675 or envirowild@gov.yk.ca.

Gr 8-10 extension (or joint project with younger and older grades):

Create an action project for yourself, your class, or your school about this issue.

Write a project goal, steps that are required to complete this project, and possible assessment methods to use during the steps and at the end of the project. Students should link their steps and assessments with a schedule and create a list of resources (information, materials, people to involve, etc.) that they will require for each step.

Sample goal formats:

- to inform/engage our community about … [the issue] by … [action: giving public presentations, creating posters to place around town, developing a website for…, making a movie about…, writing letters to…]
- to create a local program that involves our community to …[action related to issue]

Wolves can be found all over the Yukon, excepts for the icefields of Kluane National Park. Wolves are most common where prey species are abundant.

Activity 7: Student Work Sheet – Wolf Views

1. Write your response to the following question: What is the value of a wolf?

2. During and after the panel discussion, check for attitude changes using the following categories:

What I learned	What I feel now	Questions

3. Look at the question again, “What is the value of a wolf?”.
   Rewrite your response incorporating thoughts gained from the panel discussion.

Activity 7: Student Work Sheet – Identifying Issues

1. What is the issue?

2. What is the background or history behind the issue?

3. Complete the following chart by providing three different perspectives.

	Main argument or main point regarding the issue	Purpose, mission, or interest of the group	Perspective or approach (scientific, political, ecological, economic, cultural, technological)
#1:			
#2:			
#3			

4. How should the media represent this issue? Is this different from how the media generally represents an issue?

5. What are possible solutions to this issue?

6. What are possible obstacles to the solution(s)?

Activity 8

Canid Council

Note: This activity is recommended for grades 5 – 8.

Learning Objective

To enhance student awareness of human roles in human-wolf interactions happening in their environment.

To develop an understanding, through practice, of how group consensus decision-making can work as an effective way of resolving conflict.

Summary

Students will assume the perspective of stakeholders (human and nonhuman) involved in a human-wolf conflict and will work together to resolve the issue.

Background

1. Alongside thousands of Yukoners, approximately 5,000 wolves live in the Yukon, surviving by preying on large mammals. People have shared their environment with wolves for thousands of years and wolf attacks on humans are extremely rare. People are more likely to encounter aggression when surprising a bear or a moose in the wild than when coming across a wolf. While bears stand their ground or even attack if they feel that their cubs or food are threatened, wolves tend to retreat. There are no documented cases of a person being injured by a wolf defending its den or kill site.

   Though wolves tend to avoid people, they can lose their fear through habituation. This happens, for example, when wolves learn they can access pet food or food scraps in garbage that has been left unsecured. Wolves can lose their fear of humans to such an extent that they begin targeting dogs running off leash or chained in their yards. These wolves are often destroyed out of concern for public safety.

2. **Consensus Decision-Making:** It is important that all of the students have a strong understanding of what consensus means and how to achieve it.

   Consensus: An opinion or position reached by a group as a whole.

   Consensus is not a compromise. If every stakeholder comes to the table with a desire to find a solution then a consensus can be reached. Consensus decision-making is a creative and dynamic way of reaching agreement between all members of a group. Instead of simply voting for an item and having the majority of the group get their way, a group

Setting:

Classroom

Materials:

- Show the suggested video in the available online resource.
- If you do not have easy access to display media in the classroom, photocopy or read aloud the article included at the end of the lesson.
- Photocopy enough role cards for all of the students in the class. To determine how many copies you need to make, divide your student numbers by 7.
- Photocopy one "Questions for All Beings" worksheet per student.

using consensus is committed to finding solutions that everyone actively supports, or at least can "live with".

Understand what it means to give consent. Consenting to a proposal does not necessarily mean it is your first choice. Participants are encouraged to think about the good of the whole group.

In this activity, students will practice the skill of listening to others and acknowledging their points of view. If this acknowledgment encourages them to adapt their final decisions then they may reach a place of consensus.

The teacher is the facilitator for this activity. The facilitator will not voice opinions but will instead, encourage discussion and remind students of using consensus.

Available Online

Internet resource videos such as a newscast about a wolf attack on Vancouver Island: **youtu.be/mlj2GtJG3Rs**.

Activity Introduction:

Watch the recommended video or other recent online video clips about pet owners who have had negative interactions with wolves. Alternatively, read the news article included at the end of this package.

Activity Procedure:

1. Present the concept of a council to the class. They will be discussing a conflict between humans and wildlife. There will be one large council with multiple representatives for each role card.

   Situation: An off-leash dog has been injured in a nearby community, barely escaping with its life.

   Write this situation on the board. Explain that as a class we are going to work together to create a solution. They will each be representing one of the parties involved in the situation.

2. Introduce the concept of consensus. An excellent explanation for consensus is available at **www.seedsforchange.org.uk/consensusmice.pdf** .

   Explain how consensus is different than voting: if one of the parties disagrees with a proposed solution, the others involved need to hear their point of view and suggest alternatives that could help meet all of the parties' needs. In majority voting, not all needs are always met. At the end of the class you may choose to go with the solutions proposed by the majority of students because of time restrictions, but if you can, encourage them to find a consensus. The students should be encouraged to be open to changing their perspectives through discussion.

3. Give one copy of the Questions for All Beings worksheet as well as one role cards per student. Allow them time to read their cards and answer questions 1-3 from the Questions for All Beings. They should answer questions 1-3 separately and then meet as a group of the same characters/role cards. In their groups they need to discuss, find similarities and prepare to present their groups stance.

4. Ask the students to sit in a circular formation. Make sure all students can see each other. Ask students to introduce themselves in character. The groups need to describe that character's perspective on the situation based on their answers to questions 1-3.

5. Before moving on to the next step, remind the students of the intention behind consensus. Active listening is important and they need to try to make sure that all group needs are met. This is not about somebody winning and somebody losing. It is about coming to a decision to which everyone can consent.

6. Students will then answer questions 4 & 5 and present to the council. These questions will help them present their proposed solutions as well as a rationale.

7. As all of the groups are suggesting their solutions the teacher will NOT be writing the suggestions on a board. As the teacher/facilitator you will be only writing what you believe the agreements are. As you write the agreements you will be checking to see that all of the groups unanimously agree. If a group does not agree with a suggested solution, then the facilitator needs to find out what is stopping them. Encourage them to always think of and be aware of the group's needs.

8. Teacher asks what differences there are between the initial solution suggestions and the council's consensus. This is a time for the teacher and students to assess if they were truly listening and if their perspectives have changed.

9. Wrap up this activity by having the students fill out the self-assessment table in the worksheet.

Toward the end, when testing for consensus you could mention the power of **blocking a group consensus.** This is very rare and could result in one person in the group having the power to stop the group from making a decision. Emphasize that this action has important consequences for the group and needs to be carefully decided.

Extensions

1. Have students create a mask or wear costumes during the council so they can enter more into character.

2. Students can create a short video about how to have positive wolf and human interactions, to be shared with other classes or posted online. .

3. Begin a poster campaign to put up around town or around the school to promote positive wolf and human interactions.

4. Ask the students to decide how they would like to bring their solution forward, as an action-based project in their school/community.

Assessments

Self and group assessment will be completed by students in the rubric at the end of their worksheet.

Activity 8: Role Cards

Injured Dog

Name:_____

You are off leash in the forested area behind your house. You are peeing on trees and smelling for other animals when you discover a new smell. Some other kind of dog is nearby.

To defend your territory, you signal your family with a bark and start running, hot on the scent. As you approach this strange, much larger dog, things don't feel quite right. But you feel the need to finish what you have started. After all, your family's territory is at stake. You keep on barking and running at the larger, wild dog. This new type of dog stands its ground, and then lunges at you, swiping and biting. Suddenly, you are surrounded by a whole group of these animals. One of the animals bites you in the leg, the head and the side of your body.

Your owners interrupt the wolves before anything can go further. You are badly hurt but taken the vet and bandaged up. You will survive.

Dog Owners

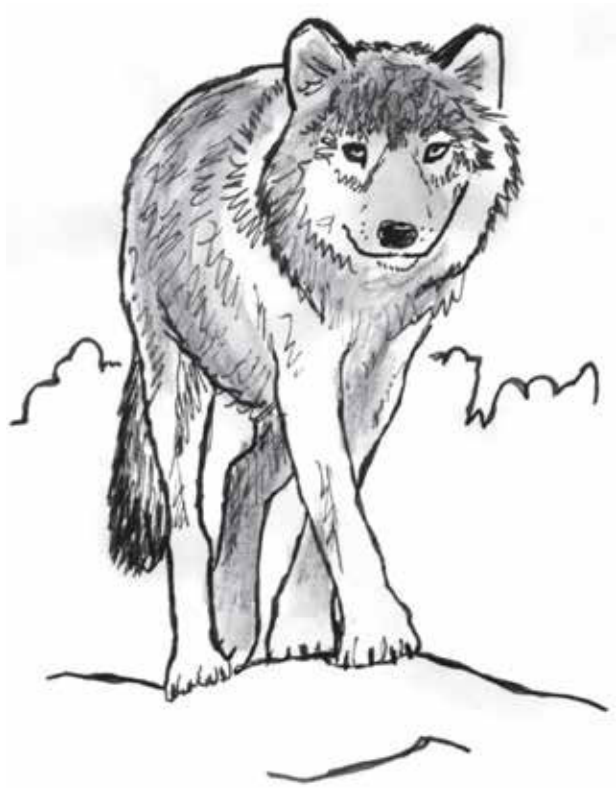
Names:_____

_____

You enjoy living slightly out of town where it is quieter and you have a better chance of seeing wildlife. You have always allowed your dog to run off-leash with the neighbourhood dogs in the forested area behind your house.

About 30 minutes after allowing your dog to go outside you hear some yelping coming from the forest out back. You go outside to see that a pack of wolves have surrounded your dog and one has attacked your pet. You wave your arms in the air to look larger and yell at the wolves to get away. The pack retreats. You bring your dog to the vet. Your dog will survive, but you are shaken by the incident.

Activity 8: Role Cards



Wolf

You are part of a hungry pack of wolves. During your hunting circuit, you come to the edge of a small human community, and there are lots of animals running around. One of them, which is small, and looks like a small wolf, but isn't, runs up and starts barking at you like crazy. In response, you take a swipe at him, and the situation escalates. You manage to get in a number of bites, but two humans run up and interrupt before you can finish what you started. You leave the area before anything else can happen.

You feel disappointment that you aren't able to provide food for your pack. Although, you are been watching the community closely, and have noticed that there may be more opportunities to get an easy meal. A number of these animals wander around on their own, and some are even tied up outside in their yard. Though you don't like to enter human territory, this new potential source of prey clearly has few defences against your hunting skill.

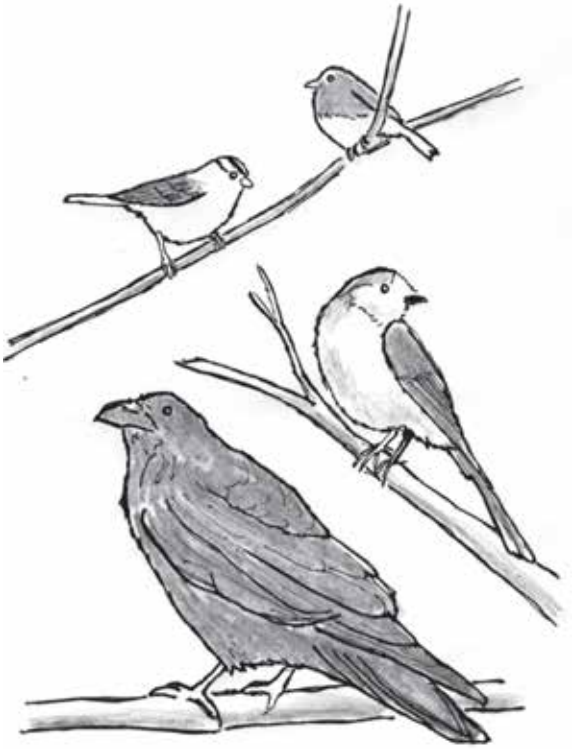
Wolf Pack

You are members of a hungry pack of wolves. The winter has been tough, there hasn't been a lot to eat and you are covering large distances looking for food.

In the midst of your hunting circuit, you come to the edge of a small human community, where there are a number of animals which look like wolves, but are smaller and running around. One of these animals begins to bark at the alpha in your group. That means the smaller animal wants to challenge the alpha. The alpha wolf will not stand this from such a small creature. He bites at the dog a number of times as the pack begins to surround the smaller animal and the wolf. The pack senses that this animal could be a source of food. Two humans come toward you yelling and waving their arms, which causes the pack to retreat.

This reminds you of past encounters with humans and causes you to worry that they may try to kill members of your pack.

Activity 8: Role Cards



Birds

You have just recently returned home after a long winter away down south. Other birds that stuck around during the winter let you know about this important meeting just in time for you to attend. You choose to take part in the council because members of your group have an important stake in the outcome of this meeting.

Some of your members, including the Ravens and Whiskey Jacks, rely on the wolf pack to take animals from the land and leave parts of the carcass for you to eat.

Other members of your group, including warblers, flycatchers and sparrows, rely on carnivores like wolves to keep the herbivores in check. That way the herbivores don't overgraze the plants, which would destroy the food and shelter required for these members to raise families here during the summer.

Plants

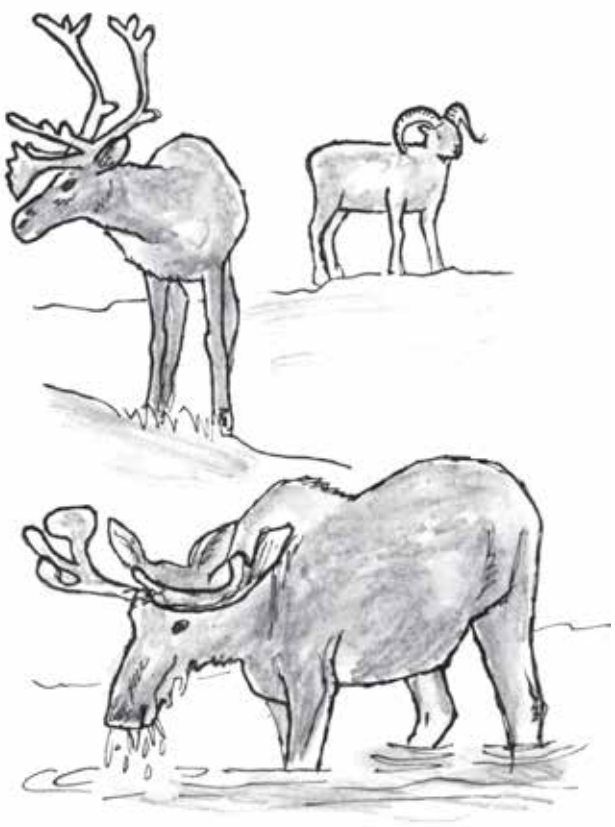
You are concerned about what has happened, and worried that the humans will choose to take revenge on the wolves for what has come to pass.

You slept through the events that the council is in the midst of discussing, but have an important stake in the outcome of this process, as members of this ecological community.

If wolves are removed from the area, the herbivore population (moose/caribou/sheep) will increase in number, and graze too heavily on your leaves and twigs. They may in fact eat themselves out of house and home, while damaging the delicate balance that maintains the land everyone relies on.

Your community wouldn't be able to provide as much shelter and food, which means there will be less available for the insects, birds and the mammals that live here and help disperse the seeds of some members of your community.

Activity 8: Role Cards



Herbivores
(Moose/ Caribou/Sheep)

You are not sure how you feel about this situation, as a member of a population that has strong connections to the land and an important relationship with both people and wolves.

The winter has been tough. It has been difficult to travel through the snow with its icy layers. However, you know that although there are fewer members of your population this spring, there will be fewer wolves that will survive. Down the road, this is good news for your population: With fewer wolves, more babies will be born into your population and more adults will survive.

However, you are glad that there are wolves and people living in your habitat, because without them, your population would become too big and die of starvation. You recognize that wolves and people have always played an important role in keeping your population in check and maintaining the balance that all members of the community rely on.

(You can pick to be sheep, caribou or moose. Suggestion: pick one that is common in your area.)

Activity 8: Student Worksheet – Questions for All Beings

Name: _____

Role: _____

Your role card will provide a basic background on your character.
Use this information as well as your "best guess" to answer the following questions.

All about you!

Answer questions 1-3 in order to prepare for your upcoming presentation to the group. Use your answers to prepare a short presentation to council.

1. What's your job in the community? (What services do you provide? Ideas: Do you dispose of waste or dead animals? Do you provide food for larger animals?)

_____

_____

_____

2. Who or what do you depend on to survive?

_____

_____

_____

3. How are you affected by this situation?

_____

_____

_____

** Without hearing information from other groups what is your proposed solution at this time? **
Not to be shared until the end.

Read questions 4 & 5 before listening to presentations. Meet with other students with the same role card. You will be presenting together.

Activity 8: Student Worksheet – Questions for All Beings

Answer questions 4 & 5 after listening to your classmates presentations.

4. Write two other points of view that you learned from listening to other council members during the meeting?

1.) _____

_____

2.) _____

_____

5. What is your idea for a solution?

_____

_____

Self-Assessment

Circle or highlight the box which best describes you.

How did I….

1. ...respond to the questions for all beings?	I didn't put much effort in.	I put a bit of effort in.	I was really thinking and I tried my best.
2. ...participate in the council meeting?	I didn't add anything to the discussion.	I said a few things during the discussion.	I was involved and contributing to the discussion.
3. ...listen to and honour other positions during the exercise?	I didn't listen to other solution suggestions.	I listened to other solution suggestions.	I considered and adapted my final opinion based on other solution suggestions.
4. ...enjoy this activity? (Does not count for marks, be honest!)	Not at all	It was ok.	I thought it was pretty fun!

Your comments:

Activity 8: Article

Third dog attacked by wolves in Marsh Lake area near Whitehorse, Yukon

Wildlife officials warning pet owners to keep close eye on pets during cold spells

CBC News Posted: Feb 03, 2015 9:44 AM CT Last Updated: Feb 05, 2015 5:26 PM CT
www.cbc.ca/news/canada/north/third-dog-attacked-by-wolves-in-marsh-lake-area-near-whitehorse-1.2942926

Wildlife officials in Yukon are warning dog owners to keep a close eye on their pets during cold spells as wild animals may be foraging for food. This past weekend, wolves attacked and killed a Yukon family's dog in the Judas Creek subdivision at Marsh Lake. It is the third reported incident of a wolf attacking a dog in the Marsh Lake area. The last attack was at the end of December.

David Bakica, a Yukon conservation officer, says cold weather could be contributing to the wolves' search for food and peoples' dogs are an easy target. "One wolf will often come around and dance around and play, the dog will bark and go after it. Once they get a little ways away from houses or people other wolves will show up and that's the end of the dog." He recommends pet owners keep their dogs on a leash. He says dogs are easy prey for wolves if they are left free to roam around. Dogs may mistake wolves for playmates and wolves will lure dogs into isolated areas to prey on them. "They'll come back to a location where they've gotten a free meal in the past and they'll come back and wander through and see if they can find something again and in this case they found another dog."

Joanna Jack coordinates Wild Wise Yukon, which helps reduce conflicts between humans and wildlife. She says wolf attacks on dogs can be prevented. "Attractants can include pet food, garbage, bones; any of those things should be kept secure. We're really encouraging people to keep their pets indoors or have them tied up in a well-lit and fenced yard."

SECONDARY UNIT

Grades 8 – 10

Secondary Unit Introduction:

Grades 8 – 10

This secondary unit was developed for grade eight to grade ten students to enhance students' knowledge and understanding of wolf ecology and management while augmenting their reflective, critical, and creative thinking skills.

Four Activities

The first two activities are similar in that they are both games involving physical movement in large areas and they both deal with population fluctuations. Additionally, Activity 1 includes an examination of predator/prey relationships while Activity 2 focuses on the limiting factors of habitat components. Activity 3 encourages students to become wildlife managers and introduces the complexities of managing wolves in Yukon. Activity 4 guides students in evaluating media reporting on various issues related to wolf management. Each activity can be completed in a 30-60 minute session and includes ideas for extensions.

ACTIVITY 1: A Wolf Ecology Game
ACTIVITY 2: Oh, Caribou!
ACTIVITY 3: Checks and Balances
ACTIVITY 4: Evaluation of Media Reporting

Teacher notes:

Activities 2, 3, and 4 were as adapted from *Project WILD: Activity Guide*, Canadian Wildlife Federation, Western Regional Environmental Education Council, 1995. For information about other Project WILD activities, contact: Manager, Environmental Education and Youth Programs, Environment Yukon, Phone: 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675, Fax: 867-393-6206, Email: envirowild@gov.yk.ca.

Throughout this unit, encourage students to conduct their own formative assessments related to self, peers, or the general activity.

Sample questions could include:

What is going well? What difficulties am I encountering? What could I do differently? What steps am I taking that help me with this learning?

Students can also address these types of questions at the end of an activity.

Curriculum Fit

All activities meet several science curricula prescribed learning outcomes as outlined in *Science Grade 8: Integrated Resource Package 2006, Science Grade 9: Integrated Resource Package 2006,* and *Science Grade*

Resource Materials for the Classroom

Apart from the Resource Materials section of this package, there are other resources available for reference. Try your school and/or community library for a file on wolves.

The following resources are available from the YERS in Yukon Education:

- Theme Box: *Wolf Pack,* TB 0111 – non-fiction, a few fiction titles, sound cassettes, and 3 teacher resources (Gr 4-6)
- Video: Death of a legend, VT 0296 – wolf life cycle, pack social organization (Gr 7-12)
- Kit: *Never Cry Wolf*, K 3335 (Gr 7-9)
- Kit: *Animal Skulls*, K 3205 – Big horn sheep, black bear, deer, elk (split skull), human and wolf skulls

(Continued)

Materials (continued):

The following resources may be available from Yukon Environment:

- wolf materials including wolf pelts, skulls, and track casts
- resource people for classroom presentations

Contact the Manager, Environmental Education and Youth Programs, Environment

Yukon at 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675 or envirowild@gov.yk.ca.

Available Online:

Internet resources videos such as Hinterland Who's Who "The Wolf" can be retrieved from: **www.hww.ca**/**en**/**multimedia**/**videos**

Videos, *Wolf Pack*, *Death of a Legend.* National Film Board Videos.

Retrieved from: **www.nfb.ca**/**film**/**wolf_pack** (for descriptions, see Resources section)

See Resources section for other sample website resources related to wolves.

*10: Integrated Resource Package 2008***,** as well as many learning standards for the 2013 draft science curricula as developed by the British Columbia Ministry of Education. Correlation charts to the current and new draft science curricula links as well as connection notes for English Language Arts and Social Studies can be found on the following pages.

Supplementary Activities

See Resources section for additional activity ideas that can be incorporated within multiple curricula areas.

A Unit Beginning

In science journals, have students list their feelings about wolves, and their knowledge of wolf biology and wolf management. Have them share items from their list with the class. Refer to this journal entry at the end of the unit and ask students to reflect on any changes to their knowledge or attitudes towards wolves or other aspects of wolf ecology.

Divide students into small groups, provide them with paper and give them five to ten minutes to brainstorm and record their responses to the following questions.

What do you know about the living and non-living parts of your local ecosystem?

What controls the size of a wildlife population?

What does wildlife management mean to you?

Record responses on pieces of flip chart paper – one for each question used. Post these responses in the room to refer to during and at the end of this unit.

A Unit End

Return to the posted list and have students add new information gained throughout this study unit. Ask them to make notes in their science journals about what knowledge or attitudes have changes and why they believe these changes have occurred.

To conclude the unit, ask students to consider some or all of the following questions.

- What can I do to answer the questions that I still have about wolves and ecosystems?
- How do my beliefs about wolves affect the way that I act in my local ecosystem?
- Based on my learning, what actions can I take to help my family, community, wildlife, or the local ecosystem?

Connection to Intermediate Unit:

Refer to Intermediate Unit, *Activity 7: The Value of a Wolf* for Grades 8-10 extension ideas that could be integrated with this Secondary Unit or as part of other classroom activities.

Did you know that wolves are opportunistic predators? This means that they will prey on available species such as moose, caribou, deer, elk, bison, muskoxen, and sheep. As such, wolf predation influences prey populations. Wolves will also eat hares, foxes, beaver, muskrat, birds, bird eggs, and fish.

Curricula Correlations

Correlations with current B.C. Science curricula (Grade 8 &9 – 2006; Grade 10 – 2008)

Key: The Wolf activity… ● strongly reflects all aspects of the learning outcome(s) O reflects part of the learning outcome(s)	1: A Wolf Ecology Game	2: Oh, Caribou!	3: Checks and Balances	4: Evaluation of Media Reporting
Grade 8				
Life Science: Cells and Systems				
B1: demonstrate knowledge of the characteristics of living things	O			
Processes and Skills of Science				
A3: represent and interpret information in graphic form		•		O
A5: demonstrate scientific literacy			O	•
A6: demonstrate ethical, responsible, cooperative behavior	O	•		
Grade 9				
Processes and Skills of Science				
A3: represent and interpret information in graphic form		●		O
A4: demonstrate scientific literacy			O	●
A5: demonstrate ethical, responsible, cooperative behaviour	O	●		
Science 10				
Life Science: Sustainability of Ecosystems				
B1: explain the interaction of abiotic and biotic factors within an ecosystem	●	●	O	
B2: assess the potential impacts of bioaccumulation				
B3: explain various ways in which natural populations are altered or kept in equilibrium	•	•	O	
Earth & Space Science: Energy Transfer in Natural Systems				
D3: evaluate possible causes of climate change and its impact on natural systems				
Processes and Skills of Science				
A3: represent and interpret information in graphic form	O	•		O
A4: demonstrate scientific literacy			O	•
A5: demonstrate ethical, responsible, cooperative behaviour	O	•		

Wolves Across Curricula

Activities in the Intermediate Unit may also be used to connect with many learning outcomes from the following current curricula:

- English Language Arts: Oral Language, Reading & Viewing, Writing & Representing
- Social Studies: Applications of Social Studies, Economy & Technology, Environment

Setting:

Gym or large field

Materials:

- paper and pen to record results
- 5 different coloured bands or fabric strips to mark different animals
- diagram or sketch of initial playing field arrangement

Activity 1:

A Wolf Ecology Game

Learning Objective

To enhance student awareness of predator/prey relationships and population fluctuations.

Is population equilibrium obtained in ecosystems through predator-prey interactions? Why or why not?

What adaptations assist predator and prey species survival in Yukon?

Summary

Students will play a game that demonstrates survival adaptations of wolves and how many wolves can live in a given area.

Background

Wolves prey primarily on large ungulates (moose, caribou, sheep); the population of wolves in a given territory is linked to the population of ungulates as well as to effects of predators (eagles, bear) on their young.

Activity Introduction

See A *Unit Beginning* in Introduction to the Secondary Unit. Additionally, the 20-minute video *Wolf Pack* or the 51-minute *Death of a Legend* can be shown.

Review characteristics of living organisms (respond to environment, require energy, reproduce, excrete wastes, gas exchange, made of cells). *Which characteristic(s) relate to survival adaptions?*

Review organism roles within an ecosystem:

- *producer/autotroph:* an organism that produces food from sunlight or chemicals
- *consumer/heterotroph:* an organism that must consume another organism for food (herbivore – consumes plants, carnivore – consumes other animals, omnivore – consumes plants and animals)
- *decomposer:* an organism that consumes dead organisms or waste products from other organisms and releases nutrients for use by other organisms
- *predation:* predator-prey cycle

Before going outside, sketch a basic schematic (diagram) of the initial positions of the game. Alternatively, take a simple diagram outside to show the students when discussing procedure step #3.

Activity Procedure

1. Take students to the game site and make observations about the surroundings (human impacts, natural elements, species of plants/ insects/animals present).

2. Briefly discuss how this habitat would or would not be suitable for wolves, moose, bears, eagles, and/or humans.

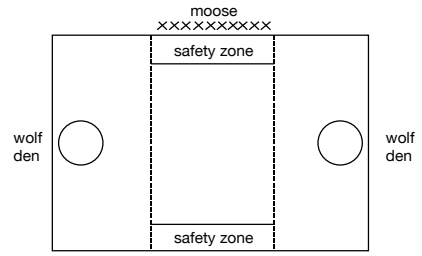
3. Designate students into roles: two wolf packs of four members each (each pack needs a dominant pair), 15-18 moose, 2 eagles, 1 bear and 1 human. Distribute ribbons and tell students which colours represent which animals.

4. Before a round, each wolf pack gathers at a den site on opposite ends of the field. The eagles, bear, and human arrange themselves on the edges of the game site (spread out as much as possible). Designate a boundary between the territories of the two packs — this will be a travel corridor or migration route for moose. At either end of the boundary or travel corridor are 'safety zones' for moose. Use a simple diagram to show the initial arrangement.

5. At the start of the round, moose try to make their way through the travel corridor without being captured (tagged) by wolves. Only the dominant pair of the pack may capture a moose. The other two subordinate wolves can block predators from capturing wolf pups in the den. Any captured moose goes to the den and become wolf pups. As each pup is added the oldest pup assumes subordinate status. Eagles and bears can capture (tag) moose and wolf pups, who become members of the species that captured them. All predators (wolf included) can only take one moose per round. The human can take any animal any time, and the animal then becomes a moose in the next round. If the human takes one of the dominant pairs, a subordinate wolf takes its place. Adult wolves may take another predator when at least two wolves tag a predator simultaneously. The captured predator becomes a wolf pup.

6. The end of the round, which represents one year, occurs when moose have completed movement down the travel corridor to the 'safety zone'. Have students sit down, then record numbers. It is possible that one of the predator populations may have been eliminated. If one of the wolf packs is eliminated, then two subordinate wolves from the other pack may move over and establish their own pack. If, after completing a round, a wolf pack or predator does not capture any moose, one member (the youngest or most recent) 'dies' and becomes a moose. Ensure that students switch coloured ribbons when they become a different animal.

7. Continue for about ten rounds, recording population numbers after each round. After a couple of rounds the moose population will shrink



Schematic of initial game positions

and wolf population will grow. Then that trend reverses and by the end of the game an equilibrium in populations should be reached.

8. At the end of the game, gather students together and analyze the results. This could be completed outside or back in the classroom. For example, ask students:

   What physical or behavior adaptations help moose and wolves survive as prey and predators, respectively (e.g., wolves working as a pack, size of moose often limits predation to young or weak animals)?

   To describe reasons for any changes in moose, wolf, eagle, bear, or human populations.

   To assess aspects of this game that likely reflect a realistic scenario (e.g., actions/role of dominant and subordinate wolves) and aspects that were not included and would require consideration for a more realistic scenario (e.g., no "safety zones" in ecosystems, weather effects).

9. Ask students to reflect and write whether the results reflect real life population fluctuations, including reasons why or why not. This aspect may require follow-up research and contemplation for next class.

Extensions

1. Research a Yukon Species at Risk and identify:
   - its role in the ecosystem (e.g., create a food web or energy pyramid),
   - causes or threats to that species' population,
   - traditional knowledge about the species or its relationship within Yukon First Nations culture(s),
   - any existing management plans or actions to conserve this species, and
   - a list of personal actions that can positively affect this species.
2. Use your research to develop an educational advertisement (e.g., movie, website, presentation, or poster) and present your ad to your class, the school, or community.
3. Go outside! Observe, record, and photograph a nearby habitat and look for evidence of different ecological roles (e.g., other predator-prey relationships, producer-herbivore relationships, decomposers, invasive vs. indigenous plants, etc.). Develop a series of questions to examine based on your initial observations. Create a concept map to display your findings and show interactions among different species.

4. Research species or environmental monitoring programs that occur in your community through work done by Yukon Environment, Yukon College, or non-governmental organizations such as Yukon Conservation Society, Yukon Chapter of Canadian Parks and Wilderness Society (CPAWS).

Grade 8: Develop a chart that compares multi-cellular and uni-cellular (single-celled) organisms based on the characteristics of cellular composition, method of obtaining energy, waste production, response to the environment, importance to humans or the local ecosystem. Sample species may include: wolf, moose, willow, bacteria (*Mycobacterium* – causes Tuberculosis), protists (e.g., *Giardia* in water – causes Giardiasis "Beaver Fever")

Grade 10: Examine other roles between organisms within an ecosystem Provide examples of commensalism, mutualism, parasitism…

Assessments

1. Using the initial inquiry questions ask students to respond verbally or in journals.
2. Ask students to explain wildlife adaptations using Yukon examples.
3. Ask students to identify realistic and non-realistic aspects of the activity and other factors that influence population changes in wildlife.

Source:

Zarki, Joseph W. *Getting to know the Wolf: A Teacher's Guide to the "Wolf – Pac" Materials, A School Outreach Project of the National Park Service,* Yellowstone Association for Natural Science, history, and Education, Inc. 1989

Studies show wolves that kill moose tend to concentrate on calves, yearlings, and weak moose (old or diseased). However, any moose can be vulnerable depending on terrain, snow conditions and its response to attack.

Setting:

Gym or large field

Materials:

- flip chart with paper and pen
- clipboard and student journals or paper to record observations and items from game discussions

Activity 2:

Oh, Caribou!

Learning Objective

To distinguish between biotic and abiotic limiting factors and identify their effects on wildlife populations.

How do biotic and abiotic limiting factors affect populations within an ecosystem?

What human impacts on biotic or abiotic components do you observe in your local ecosystem?

Summary

Students become caribou, wolves and components of habitat in a physical activity. The collected data is graphed and analyzed.

Background

Limiting factors: A variety of factors affect (limit) the ability of wildlife to successfully reproduce and to maintain their populations over time.

Biotic (living) factors include: bacteria (e.g., ones that cause disease, help with decomposition), animals (e.g., through predator/prey relationships), and plants (e.g., energy sources for herbivores).

Abiotic (non-living) factors include: air, light, temperature, water, and soil.

Variation in weather conditions from season to season, environmental pollution, accidents, and habitat destruction or degradation may affect the availability of abiotic components and therefore impact the interactions with biotic factors of an ecosystem.

Human presence and activities, as well as some naturally- occurring limiting factors, prevent wildlife populations from expanding indefinitely. In some situations, a combination of such factors can threaten populations, or even eliminate whole species of animals.

The most fundamental life necessities for any species are food, water, shelter and appropriate space. This activity is designed for students to learn that:

1. Good habitat is the key to wildlife survival;
2. A population will continue to increase in size until some limiting factors are imposed;
3. Limiting factors contribute to fluctuations in wildlife populations;
4. Nature is never in “balance”, but is constantly changing.

Wildlife populations are not static; they continuously fluctuate in response to a variety of stimulating and limiting factors. We tend to speak of limiting factors as applying to single species, although one factor may affect many species. Natural limiting factors, or those modeled after factors in natural systems, tend to maintain populations of species at levels within predictable ranges. This kind of "balancing nature" is not static, but is more like a teeter-totter than a balance.

In Yukon, wolves prey upon many caribou herds. These wolves (among other predators) are a "limiting factor" for the herds. However, wolves have not been known to eliminate a herd. As with any animal population, caribou and wolf populations have highs and "crash" to lows. When the caribou population is at its high, the wolf population may also be high. However, the crash of the caribou population will take several years to show in the wolf population because alternate prey sources are available. Some caribou herds are significantly reduced by wolf predation. The caribou population may take decades to recover from a crash because of the slower fluctuation in wolf populations, especially if hunting continues indiscriminately.

Teacher notes:

See Project Caribou: **taiga.net/projectcaribou/index.html**

For resource information about caribou in North America, K-12 activities (including downloadable pdfs), caribou news weblog, and other background support materials.

"Oh Caribou" description is available from: **taiga.net/projectcaribou/support_materials/Oh%20Caribou%20(from%20Project%20WILD).pdf**

Refer to Resources section for other online resources.

This activity was adapted from "Oh Deer", p 206, *Project WILD: Activity Guide*, Canadian Wildlife Federation, Western Regional Environmental Education Council, 1995. For information about other Project WILD activities, contact: Manager, Environmental Education and Youth Programs, Environment Yukon, Phone: 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675, Fax: 867-393-6206, Email: envirowild@gov.yk.ca.

Activity Introduction

Review the essential components of habitat: food, water, shelter and space as well as student prior knowledge of biotic and abiotic limiting factors.

Note: Review procedure and adjust according to current class size (#8 onward requires a slightly larger group or a combination of two smaller classes).

References:

Adapted from Sumanik, Inge "Oh, Caribou" Environment and Conservation Education Resources Binder, A Yukon Adaptation of "Oh, Deer" from *Project WILD: Activity Guide*, Canadian Wildlife Federation, Western Regional Environmental Education Council, 1995

Keith, L.B., J.R. Cary, O.J. Rongstad, and M.C. Brittingham. (1984). *Demography and Ecology o f a declining snowshoe hare population.* Wildlife Monographs.. July. No. 90

Krebs, C.J., B.D. Gilbert, S. Boutin, A.R.E. Sinclair and J.N.M. Smith (1986). Population biology of food – supplemented populations in the southern Yukon 1976-84. J. of Animal Ecology 55, 963-982.

Mowat, G. (pers. commun.1992)

Activity Procedure

1. Complete a nature walk en route to the game site. Ask students to list the biotic components or any evidence of living organisms of the ecosystem that they encounter (e.g., insects, plants, animals). Students will also record (list and take photographs) of any human impacts or other biotic or abiotic impacts (e.g., animal evidence, weather-related evidence) that they observe that could affect the organisms in this ecosystem.

2. Take students to the game site. Mark two parallel lines on the ground nine to eighteen metres apart. Randomly assign every fourth student to be caribou. All other students will be habitat components (food, water, or shelter) of their choosing.

3. At the beginning of every round, caribou choose which habitat component they are looking for, and the habitat components decide which component they will be:

    - When a caribou is looking for food, it clamps its hands over its stomach. Food will have the same sign.
    - When a caribou is looking for water, it clamps its hands over its mouth. Water will have the same sign.
    - When a caribou is looking for shelter, it holds its hands over its head. Shelter will have the same sign.

4. Start each round with caribou lined up along one line and the rest lined up along the other line, their backs towards each other. Ask them to make their signs – each caribou deciding what it has chosen to look for and each habitat component deciding what it is.

5. At the count of three, the caribou and habitat components turn to face each other still holding their signs clearly. The habitat components stay still while caribou run to the component that they need and take it back to the caribou line to become caribou (representing the caribou successfully meeting its needs and reproducing). Any caribou that fail to find the component they need 'die' and become habitat components. When more than one caribou reach a habitat component the caribou that gets there first survives. If a particular habitat component is not chosen, it stays there on its line for the next round.

6. Play five more rounds, recording the number of caribou after each round. Keep the pace brisk.

7. Bring students together and encourage them to talk about what they saw and experienced and relate their descriptions to population fluctuations. (For example, they saw caribou finding more than enough of its habitat needs and expanding its population until the habitat was depleted – there was not enough food, water or shelter. Caribou starved or died of thirst or lack of shelter and become habitat.)

8. Ask students how wolf populations would be affected by fluctuations in caribou populations.

9. Begin the game again, as in #2, with a new variation. Choose three students to be wolves. They start each round at the top of the parallel lines and hunt in a pack by holding hands in a line. A caribou can be captured (tagged) between lines. When a caribou is captured it becomes a wolf; if it is captured with a habitat component, the component returns to its line. When the pack grows to six, it divides into two packs. The pack must capture a caribou at least every second round, otherwise the entire pack becomes habitat components.

10. Play ten more rounds, recording the number of caribou and wolves after each round. Keep the pace brisk.

11. Bring students together and encourage them to talk about what they saw and experienced. How did the introduction of a wolf pack affect the caribou populations? How did the wolf population fluctuate during the game?

12. Return to the classroom and post the data recorded in #6 and #9. Explain that each round represents one year. Have students make a graph for the caribou population with the number of caribou along the X-axis and the number of years along the Y-axis.

13. Ask students to describe the pattern of their caribou population.

    The caribou population fluctuated over a period of years. This is a natural process. Wildlife populations tend to peak and rebuild, peak and rebuild, as long as there is good habitat and sufficient numbers of animals to successfully reproduce.

14. Add the wolf population fluctuations on the same graph. Discuss how the wolf populations reflect caribou populations, what limiting factors could become excessive, and how wildlife managers could avoid extreme population crashes or populations being totally eliminated (hunting regulations, predator control, trapping).

15. Have students to respond to the following items in a journal entry or other written form.

    How are wolf and caribou populations influenced by abiotic and biotic limiting factors?

    Explain at least one benefit and one restriction of this game in conveying the concepts associated with limiting factors.

    Suggest one change in the procedure that would help you with this learning activity.

    How do humans affect limiting factors in your local ecosystem?

    Where can you use what you have learned from this activity?

Extensions

1. Have a resource person from Environment Yukon or Canadian Wildlife Service give a presentation on the fluctuations and causal factors of wolf and caribou populations.

2. Research and obtain actual population data, graph populations levels over multiple years, incorporate any limiting factors for which data is available (e.g., temperature, precipitation, related predator or prey population data), and present your graph and analysis of possible limit factors to the class. Suggest areas where additional research is required. See archived data from the Porcupine Caribou Herd Satellite Collar Project on the Project Caribou website: **taiga.net**/**satellite**/**index.html** and **taiga.net**/**satellite**/**update.html**.

3. In combination with Extension #2 or as an extension of procedure step #11, discuss the X-axis and Y-Axis and link to the concepts of independent and dependent variables.

4. Research predator control programs in Yukon and debate the different issues and perspectives involved.

5. Research how changes in abiotic (non-living) components of an ecosystem can affect the biotic (living) components in a Yukon ecosystem.

6. Create a detailed food web or concept map that depicts the interaction of biotic factors in a Yukon ecosystem of your choice. Make sure you include organisms from all trophic levels. Explain what happens to the transfer of energy through different trophic levels. If habitat loss or degradation occurs, which trophic level(s) will be most affected and why? What actions can be taken within your family or community to prevent habitat loss or degradation?

Assessments

1. What questions do you still have about populations, limiting factors, or other related topics? Encourage them to follow-up on their own questions and report back to the next class.

2. Ask students to consider the following question during and after the activity.

    - What do animals need to survive?
    - What are some of the ‘’limiting factors” that affect their survival?
    - Are wildlife populations static, or do they tend to fluctuate as part of an overall balance of nature”? Is there a pattern to this fluctuation? What is the relationship between predator populations and the fluctuations of the prey population?

- Is nature ever really in “balance”? Is there a better way to describe what actually occurs?

3. Alternatively, students can be asked to explain the most important thing that they learned and why they feel this learning was important.

4. Ask students to identify limiting factors that they believe can be controlled or impacted by human behaviours and limiting factors that they believe cannot be controlled or impacted. Include examples and a rationale for each. (This could also be built into an extension activity.)

Winter is the season in which wolves have the greatest killing success. Prey deal with cold temperatures, deep snow, and reduced food supply, while wolves have the strongest pack bond and work as a cohesive unit to hunt.

Setting:

Classroom

Materials:

- resource material on wolves for classroom display
- enough copies of the *Activity 3: Student Work Sheet* for each student

Activity 3:

Checks and Balances

Learning Objective

To increase student awareness of factors affecting a wolf population and the complexities of wolf management

What is wildlife management?

What factors influence the management of wildlife populations?

Can all of these factors be managed? Why or Why not?

Summary

Students become managers of a herd of animals in a paper, pencil and discussion-based game.

Background

Twenty-three caribou herds live entirely or in part within Yukon. Three of the herds are barren land caribou; the rest are woodland caribou. Barren-ground caribou are smaller than their woodland cousins and engage in long distance migrations between their calving and wintering grounds. Caribou are considered to be easily affected by habitat loss or degradation.

Two of the herds – the Porcupine herd (barren-ground caribou) and the Aishihik herd (woodland caribou) – have drawn media attention in the past (March 1992). United States' interest in oil and gas development of the Alaska Coastal Plain, the heart of the calving area for the Porcupine caribou herd, initiated a public outcry.

In response to declining Aishihik herd population, planning began in 1991 for wolf and caribou management. The experimental hypothesis was that predation by wolves was the greatest liming factor of caribou populations. As part of the Aishihik Caribou Herd Recovery Program, a five-year wolf reduction program (aerial shooting, sterilization, and contraception methods) was implemented along with the banning of licensed and First Nations' hunts of the Aishihik and Kluane herds. As the control for this experiment, three other caribou herds (Wolf Lake, Ibex, and Chisana) were monitored for incidence of disease, hunting, migration, calf births, snow depth and snow melt, and winter food quality. This experiment concluded that the Aishihik caribou herd had the greatest population increase and that this increase was due to wolf population controls and discontinued human hunts. The Yukon public expressed greater acceptance of wolf fertility control methods over aerial controls. Other woodland caribou recovery programs – the Fortymile herd recovery program that incorporated wolf fertility controls and hunting bans and the Chisana herd project that

incorporated captive raising of caribou – shows a movement away from an initial focus solely on lethal wolf control methods (initiated with the Finlayson herd program in the 1980s).

A decline in the Porcupine herd population was observed with estimates of 178 000 animals in 1989 to 123 000 animals in 2001. The 2010 population census resulted in an estimate of 169 000 animals. The exact causes of this decline and recovery of this population is still under investigation. Factors that may play a role include low animal survival rates, climate change effects on migration and available food, and impacts from human activity. The most recent Porcupine caribou herd population estimate is 197 000 from the 2013 summer survey by the Alaska Department of Fish and Game, Yukon Government, and the Government of the Northwest Territories. For the Porcupine Caribou Management Board media release, see: **www.taiga.net/pcmb/documents/2014-PCH-census-pr.pdf**.

Teacher note: This activity was adapted from "Checks and Balances", p 227, *Project WILD: Activity Guide*, Canadian Wildlife Federation, Western Regional Environmental Education Council, 1995. For information about other Project WILD activities, contact: Manager, Environmental Education and Youth Programs, Environment Yukon, Phone: 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675, Fax: 867-393-6206, Email: envirowild@gov.yk.ca.

Teacher Preparation

Make cards from the *Activity 3: Resource Sheets,* according to three categories: Reproduction Cards, Condition Cards, and Management Cards. There are 36 cards in total. The number in parentheses indicates how many of each card are to be made.

Notes:

- The number of cards and the suggestions for numerical manipulations, such as "three times the roll", are relatively arbitrary. They are designed for students to recognize that a number of diverse factors can affect wildlife; the numerical weights should not be interpreted literally. (After using these cards once, students may want to experiment with making additional cards or changing these cards. Students may also want to make additional complete sets of cards for use by small groups or individual students.
- As the cards are read aloud, be certain to note differences in decreasing or increasing herd size by percentage or by number.

Activity Introduction

Review the terms:

carrying capacity **–** a wildlife management term for an equilibrium or balance expressed by the density of forage plants and the number of

References:

Adapted from Purdy, Ann "Checks and Balances", Environment and Conservation Education Resources Binder, A Yukon Adaptation of "Checks and Balances" from *Project WILD: Activity Guide*, Canadian Wildlife Federation, Western Regional Environmental Education Council, 1995

Caribou and Human Activity, A. Martell and D. Russell, editors, September 1983, Proceedings of the 1st North American Caribou Workshop, Whitehorse, Yukon, 68 pp.

Farnell, R. (2009). *Three Decades of Caribou Recovery Programs in Yukon: A Paradigm Shift in Wildlife Management.* Accessed from: **www.env.gov.yk.ca/publications-maps/documents/caribou_recovery_programs.pdf**

Porcupine Caribou Management Board: **www.pcmb.ca**

(population information: **www.pcmb.ca/herd#population**)

*Second Annual Report***,** international Porcupine Caribou Board, 1990,16 pp.

The YCS Quarterly, Winter 1992, The Newsletter of the Yukon Conservation Society.

(Continued)

References *(Continued)*:

Yukon Environment, Full Mammal Profiles:

e.g., Woodland Caribou:

www.env.gov.yk.ca/animals-habitat/mammals/documents/Woodland_caribou.pdf

Yukon Environment and the Yukon fish and Wildlife Management Board. (2012). *Yukon Wolf Conservation and Management Plan*. Available in Resources section or from: **www.env.gov.yk.ca/publications-maps/documents/yukon_wolf_conservation_and_management_plan.pdf**

Yukon Environment caribou or other species reports, see: **www.env.gov.yk.ca/publications-maps/plansreports.php#wf_mgt**

animals feeding on those plants in a given area. Carrying capacity is the balance between herbivores and their food supply. In general ecological usage, carrying capacity is the equilibrium established between any life form and its environment. It is frequently expressed as a number indicating the population of any given animal a given area can support. Carrying capacity varies throughout the year.

viable population – a population capable of living, growing and developing.

Activity Procedure

1. Outline the activity – each student will be the manager of a caribou population. The carrying capacity of the habitat is 100 caribou. The object of the activity is to end up with a viable population after nine rounds (representing nine years). If at any time a student's population reaches less than ten or more than 200 individual caribou, that student no longer has a viable 'herd' and will sit out until the conclusion of the game.

2. Each student has a beginning population of 100 caribou. The cards are separated into three decks totalling 36 cards: a condition deck (18 cards), a reproduction deck (nine cards), and a management deck (nine cards). Shuffle the cards within each deck. Cards will be drawn in the following sequence: condition card, reproduction card, condition card, management card. This sequence of draw will be repeated, each repetition representing an annual cycle (students may think of each draw as representing a different season). A student draws a card and reads it aloud to the class, then rolls his/her die and follows the instructions on the card to determine his/her herd population's new size. Some computations will result in fractions; numbers may be rounded to the nearest whole.

   Note: Students may object to the use of dice to determine the impact of decisions made for wildlife management purposes. Their concerns are appropriate; wildlife management is based on more than the chance elements reflected in the use of dice. However, chance has its impacts as well, as in the case of weather conditions in a given year. Encourage students to discuss and consider what is realistic, and what is unrealistic, about the impact of dice in this activity.

3. Wrap up the activity with a class discussion:

   Identify and describe what appeared to be the impacts of the condition, reproduction and management cards.

   Given one objective of this activity – to evaluate hypothetical management decisions – what seemed to be the benefits and/or liabilities of any management decisions made?

   Did populations 'managed' under different strategies by different students show different trends? How do these compare? Would students 'manage' differently if given a second chance?

What aspects of this activity seemed realistic? Which didn't?

Which are examples of ways that habitat can be improved? Short term? Long term?

Is human management of wildlife populations necessary? Beneficial? Why or why not? For people? For animals?

Extensions

1. Individually or in pairs have students write their own cards to incorporate into another round. Card topics may include personal or community actions, First Nations or other local cultural perspectives, and tourism effects.

2. In small groups, students examine the concept of wildlife management from an ecological/scientific perspective, First Nations or other cultural perspective, and economic or political perspective. Each group will focus on a different perspective and present their results to the class. Students could conduct phone or in-person interviews or write letters and emails to community members, biologists, elders, council or other government representatives. Following each presentation, students will compare the perspectives and identify similarities and differences among the perspectives. Finally, students reflect and write a journal entry or poem in response to: *What is my perspective of wildlife management? What is my role in my local ecosystem?*

3. Research the role of computer modeling in understanding population dynamics and wildlife management. How does a computer model assist with wildlife management? What aspects or issues of wildlife management cannot be incorporated into a computer model? Contact Environment Yukon and see their Wildlife Management Modeling website for more information: **www.env.gov.yk.ca**/**animals-habitat**/**wildlife_management_presentations**.

4. Review components of a wildlife management plan with students (review committee, public participation, plan rationale, First Nations involvement goals, implementations strategies). Develop criteria with students to assess the 2012 *Yukon Wolf Conservation and Management Plan* (available in Resources section). Compare with previous plans and/or with the history of caribou management in Yukon (see: Farnell. *Three Decades of Caribou Recovery Programs in Yukon: A Paradigm Shift in Wildlife Management*). Invite a representative from Yukon Environment, local First Nations representative, and/or any local management board members to discuss their perceptions of wildlife management and changes they have witnessed. Following guest speakers and student group research, have students submit a proposal that recommends changes for the next caribou conservation and management plan.

5. If students need a review of scientific experiments, provide groups with the information in the Background or provide older students with the entire Fuller article (Resources Section) and ask them to explain the manipulated (independent), responding (dependent), and controlled variables in this experiment. If students require additional graphing practice, see Yukon Environment reports for census data.

6. Compare the similarities and differences in adaptations of the woodland caribou, wolves, or other Yukon species with adaptations of organisms found in different biomes (e.g., grasslands of southern Alberta or Saskatchewan). What factors influence the human impact or management of these species within these two biomes?

Assessments

1. Ask students to name four factors that can influence the size of a wildlife population and explain if these factors can be managed or influenced by humans?

2. Some wildlife managers have said that wildlife management involves more management of people than of wildlife. Explain what they might mean by the comment.

3. Ask students to reflect on the realistic and unrealistic aspects of this activity. Ask them to explain why wildlife management is a complex issue and what wildlife management means to them.

Did you know that caribou are the only member of the deer family where the males and females possess antlers? Males tend to lose their antlers in early winter while the females lose their antlers in June so that they can defend good spring feeding areas while pregnant.

Activity 3: Resource Sheets

REPRODUCTION CARD

Excellent
reproduction year!

If your population is:

- over 50 individuals, increase your herd by: $\frac{100}{\text{current herd size}} \times 5$ times your roll
- between 10 and 50, increase your herd by: the # equal to 3 times your roll
- under 10, you may not reproduce.

REPRODUCTION CARD

Excellent
reproduction year!

If your population is:

- over 50 individuals, increase your herd by: $\frac{100}{\text{current herd size}} \times 5$ times your roll
- between 10 and 50, increase your herd by: the # equal to 3 times your roll
- under 10, you may not reproduce.

REPRODUCTION CARD

Excellent
reproduction year!

If your population is:

- over 50 individuals, increase your herd by: $\frac{100}{\text{current herd size}} \times 5$ times your roll
- between 10 and 50, increase your herd by: the # equal to 3 times your roll
- under 10, you may not reproduce.

REPRODUCTION CARD

Average
reproduction year!

If your population is:

- over 50 individuals, increase your herd by: $\frac{100}{\text{current herd size}} \times 3$ times your roll
- between 10 and 50, increase your herd by: the # equal to 2 times your roll
- under 10, you may not reproduce.

REPRODUCTION CARD

Average
reproduction year!

If your population is:

- over 50 individuals, increase your herd by: $\frac{100}{\text{current herd size}} \times 3$ times your roll
- between 10 and 50, increase your herd by: the # equal to 2 times your roll
- under 10, you may not reproduce.

REPRODUCTION CARD

Average
reproduction year!

If your population is:

- over 50 individuals, increase your herd by: $\frac{100}{\text{current herd size}} \times 3$ times your roll
- between 10 and 50, increase your herd by: the # equal to 2 times your roll
- under 10, you may not reproduce.

REPRODUCTION CARD

Average
reproduction year!

If your population is:

- over 50 individuals, increase your herd by: $\frac{100}{\text{current herd size}} \times 3$ times your roll
- between 10 and 50, increase your herd by: the # equal to 2 times your roll
- under 10, you may not reproduce.

REPRODUCTION CARD

Average
reproduction year!

If your population is:

- over 50 individuals, increase your herd by: $\frac{100}{\text{current herd size}} \times 3$ times your roll
- between 10 and 50, increase your herd by: the # equal to 2 times your roll
- under 10, you may not reproduce.

 REPRODUCTION CARD

Average
reproduction year!

If your population is:

- over 50 individuals, increase your herd by:
  100 / current herd size x 3 times your roll
- between 10 and 50, increase your herd by: the # equal to 2 times your roll
- under 10, you may not reproduce.

 CONDITION CARD

Weather
Card

A cold, wet "calving" season has had a serious negative impact on the survival of the herd.

Decrease your herd by the percentage equal to five times your roll.

 CONDITION CARD

Weather
Card

Swollen rivers caused by torrential rain has had a negative impact on the survival of the herd.

Decrease your herd by the percentage equal to five times your roll.

 CONDITION CARD

Weather
Card

A mild winter with little snow has had a dramatic positive impact on the survival of the herd.

Increase your herd by the percentage equal to five times your roll.

 CONDITION CARD

Weather
Card

A dry summer has lessened insect harassment and had a positive impact on the herd.

Increase your herd by the percentage equal to five times your roll.

 CONDITION CARD

Habitat Destruction
Card

The building of a new mining town has occurred, destroying critical habitat.

Decrease your herd by the number equal to five times your roll.

 CONDITION CARD

Habitat Destruction
Card

Oil and gas development of calving grounds has destroyed critical habitat.

Decrease your herd by the number equal to five times your roll.

 CONDITION CARD

Habitat Degradation
Card

An increase in logging roads has occurred, damaging critical habitat.

Decrease your herd by the number equal to three times your roll.

 CONDITION CARD Habitat Degradation Card Aircraft overflights have begun over the herd's calving grounds. Decrease your herd by the number equal to three times your roll.	 CONDITION CARD Habitat Degradation Card Construction of a pipeline has occurred, damaging critical habitat. Decrease your herd by the number equal to three times your roll.	 CONDITION CARD Habitat Degradation Card Mineral exploration has occurred, damaging critical habitat. Decrease your herd by the number equal to three times your roll.	 CONDITION CARD Habitat Loss Card A forest fire has resulted in a loss of critical habitat for the herd. Decrease your herd by the number equal to three times your roll.
 CONDITION CARD Habitat Loss Card A hydroelectric power development has resulted in a loss of critical habitat for the herd. Decrease your herd by the number equal to three times your roll.	 CONDITION CARD Habitat Loss Card Increased traffic along a traditional migration route has resulted in a loss of critical habitat for the herd. Decrease your herd by the number equal to three times your roll.	 CONDITION CARD Habitat Loss Card Clearcut logging has resulted in a loss of critical habitat for the herd. Decrease your herd by the number equal to three times your roll.	 CONDITION CARD Habitat Loss Card Oil and gas exploration has resulted in a loss of critical habitat for the herd. Decrease your herd by the number equal to three times your roll.

 CONDITION CARD Predator Card An increase in the wolf population has occurred, affecting the herd size. Decrease your herd by the percentage equal to your roll.	 CONDITION CARD Disease Card Disease has struck the herd. Decrease your herd by the percentage equal to your roll.	 CONDITION CARD Poaching card Poaching, the illegal killing of animals, has reduced the size of the herd. Decrease your herd by the number equal to two times your roll.	 MANAGEMENT CARD Habitat Restoration Card A National Park has been created in the herd's calving grounds. Increase your herd by the percentage equal to five times your roll.
 MANAGEMENT CARD Habitat Improvement Card Oil and gas exploration have been stopped in the herd's calving grounds, improving critical habitat. Increase your herd by the percentage equal to five times your roll.	 MANAGEMENT CARD Habitat Alteration Card Clearcut logging has occurred, altering critical habitat. Increase or decrease (students decide which before rolling the die) your herd by the percentage equal to three times your roll.	 MANAGEMENT CARD Habitat Alteration Card A small forest fire has occurred, altering critical habitat. Increase or decrease (students decide which before rolling the die) your herd by the percentage equal to two times your roll.	 MANAGEMENT CARD Research Card A long term study in vegetation mapping has been successfully accomplished. Increase or decrease (students decide which before rolling the die) your herd by the percentage equal to two times your roll.

 MANAGEMENT CARD Education Card Project WILD and other education activities have led to increased understanding of wildlife and habitat. Increase or decrease (students decide which before rolling the die) your herd by the percentage equal to two times your roll.	 MANAGEMENT CARD Law Enforcement Card More conservation officers and law enforcement activities have protected the herd against illegal actions like poaching. Increase your herd by the percentage equal to two times your roll.	 MANAGEMENT CARD Habitat Acquisition Card Habitat acquistion has increased the area of available and suitable habitat. Increase your herd by the number equal to five times your roll.	
 MANAGEMENT CARD Hunting Card A request for a hunting season has been made. Do you wish to allow hunting in your area? If yes, decrease your herd by the percentage equal to five times your roll. If no, record no change in the size of your herd.	 MANAGEMENT CARD Predator Control Card An aerial wolfkill has been requested to combat the recent and rapid decline of the caribou population. Do you wish to allow predator control in your area? If yes, increase your herd by the percentage equal to five times your roll. If no, record no change in the size of your herd.		

Setting:

Classroom

Materials:

- Activity 4: Student Resource Sheet
- Yukon Wolves: Ecology and Management Issues p. 2, 6-7
- a copy of Activity 4: Student Work Sheet per student
- see Resources section for other wesbites and resources for use in this activity
- Local article about wolves in the media (see examples provided), one copy per student

Activity 4:

Evaluation of Media Reporting

Learning Objective

To enhance students' critical thinking and assessment skills of media reporting.

In what ways does the media impact our understanding of wildlife issues?

Does the media represent all perspectives on a wildlife issue? If not, which perspectives are included and which perspectives are excluded?

How can I assess the quality, balance and fairness of media articles?

Summary

Students will develop and use their own set of criteria for evaluating the quality, balance and fairness of media reporting.

Background

See *Activity 4: Student Resource Sheet.*

See the *2012 Yukon Wolf Conservation and Management Plan* (Resources section)

Teacher note: This activity was adapted from "Facts and Falsehoods", p 316, *Project WILD: Activity Guide*, Canadian Wildlife Federation, Western Regional Environmental Education Council, 1995. For information about other Project WILD activities, contact: Manager, Environmental Education and Youth Programs, Environment Yukon, Phone: 867-667-3675, Toll free (in Yukon): 1-800-661-0408 ext. 3675, Fax: 867-393-6206, Email: envirowild@gov.yk.ca.

Activity Introduction

1. Review *Activity 4: Student Work Sheet* with students.
2. Divide students into small groups and hand out a photocopied section of *Yukon Wolves: Ecology and Management Issues.* Ask them to study their section for ten minutes, take notes and give a two-minute report to the class.
3. Students could revisit or complete portions of Intermediate Unit *Activity 7: The Value of a Wolf* as a warm-up activity:
4. Review different types of perspectives: *scientific, technological, ecological, economic, political, cultural* (see A*ctivity 7 Background and Student Work Sheet: Identifying Issues*)

5. Discuss the inquiry questions presented in Activity 7:

   Are wolves important to Yukon? Why or why not?

   What are three different perspectives about wolves in Yukon?

   How do I evaluate different perspectives about wolves and wolf management issues?

Teacher Preparation: Select an initial, local news article about wolves in the media to complete with students for the first section of the Activity.

Example article sources include:

- The Star. March 2014. "Caribou count finds iconic Porcupine herd thriving in North." **www.thestar.com/news/canada/2014/03/16/caribou_count_finds_iconic_porcupine_herd_thriving_in_north**
- National Parks Traveller. February 2014. Alaska Fish and Game Employees Kill Entire Yukon-Charley Rivers National Preserve Wolf Pack. **www.nationalparkstraveler.com/2014/02/alaska-fish-and-game-employees-kill-entire-yukon-charley-rivers-national-preserve-wolf-pack24731**
- CBC. January 2014. "Wolves kill 2 dogs in Teslin, Yukon." **www.cbc.ca/news/canada/north/wolves-kill-2-dogs-in-teslin-yukon-1.2485929**
- Moore, D. "U.S. considers lifting hunting ban on grey wolves imported from Canada." The Canadian Press, Jan 20 2014. Retrieved from: **www.thestar.com/news/canada/2014/01/20/us_considers_lifting_hunting_ban_on_grey_wolves_imported_from_canada**
- Yukon News. May 2013. Whitehorse resident charges for shooting wolves. **www.yukon-news.com/news/whitehorse-resident-charged-for-shooting-wolves**
- University of California Berkeley, Press release March 2005 "Wolves alleviate impact of climate change on food supply, finds new study" Sarah Yang University of California Berkeley .(**berkeley.edu/news/media/releases/2005/03/21_wolvesclimate.shtml**)
- Savage, C. "The ripple effect – When 31 Canadian wolves were relocated to Yellowstone National Park, the impact was swift and surprising." Canadian Geographic, September/October 2003. Retrieved from: **www.canadiangeographic.ca/wildlife-nature/articles/pdfs/grey-wolf-the-ripple-effect.pdf**
- International Wolf Center. Current News Items. **www.wolf.org/learn/wolf-news/headlines**

References:

Adapted from "Facts and Falsehoods", page 316 – 328, from *Project WILD: Activity Guide,* Canadian Wildlife Federation, Western Regional Environmental Education Council,1995.

- The Wildlife News. E.g., Yellowstone 19 years after wolf re-introduction. **www.thewildlifenews.com/category/wolves/yellowstone-wolves**
- The New York Times. Science – Wolves articles. **topics.nytimes.com/top/news/science/topics/wolves**
- National Science Foundation News: **www.nsf.gov/news**
- BBC News, Science & Environment: **www.bbc.com/news/science_and_environment**

Refer to Resources section for other ideas of sources to use during this activity.

Activity Procedure

1. Provide each student with a copy of the first article (see note above) as well as a copy of *Activity 4: Student Work Sheet* and *Activity 4 Student Resource Sheet*. Allow time for students to read the article and worksheet and then work through the questions together as a class. Discuss student responses as well as their ideas for additional questions.
2. Divide students into pairs and give each pair another article from links provided above or Resources section and a copy of *Activity 4: Student Work Sheet*. Alternatively, students can be tasked with locating their own new article regarding wolves by performing an Internet search and/or searching online news sources. See Teacher preparation and Resources section for website source ideas.
3. Ask students to review the article and answer the questions on the sheet. Encourage students to develop any other questions that they think might be asked and conduct a class brainstorming session if required (e.g. during #1).
4. Allow sufficient time for the pairs to read the article and respond to the questions. Ask each pair to summarize their article and report their responses. Discuss students' responses as a class. What do they think about the overall quality of what they read?
5. Have student work as a whole group to develop a 'checklist' that they can use to evaluate articles. What, in their view, should be the characteristics of an article of quality? Of balance? Of fairness?
6. After the checklist has been developed in draft, open the discussion to a few more questions. For example, ask students whether or not it is possible to be forceful and effective in expressing one's view without becoming unfair or biased. Is it possible to separate one's own view from a publicly neutral position? To what extent do government agencies, businesses, interest groups, and individuals have a responsibility to acknowledge other points of view concerning

their policies and practices? After discussion, see if students want to make any changes in their checklist. Make any changes that they recommend. Post the final checklist in a visible place in the classroom.

Extensions

1. Have pairs prepare a short informational article on any aspect of the *2012 Yukon Wolf Conservation and Management Plan*. Have students develop a list of five things they could do to enhance the public's understanding of wolf management.

2. Compare media reporting in Canada with media reporting in another country.

   (e.g., United States and wolves in Yellowstone Park; Caribbean or Australian coral reefs)

3. Why do some species receive more attention than others (e.g., in the media)? Research a species that is not 'popular' (e.g., most plants, insects, amphibians, voles, grebes, and others and develop a promotional brochure, poster, movie, television or radio advertisement to explain the importance of this species to its Yukon ecosystem, a rationale why others should care about this species, and personal actions that individuals or families can take to ensure the survival of this species.

4. Have student create their own media action project for use in class, at the school, or in the community about an environmental issue of choice (wolves, wildlife, sustainable actions, etc.). Write a project goal, target audience, procedure or method required to complete this project, and possible assessment methods to use during the steps and at the end of the project. Students should link their steps and assessments with a schedule and create a list of resources (information, materials, people to involve, etc.) that they will require for each step. Their end product should be a radio, television, or online public service announcement or news brief in some electronic format (e.g., iMovie, presentation).

Assessments

1. Define each of the following: *quality, balance,* and *fairness,* when evaluating an article on wolf management and provide an example of each.

2. Ask students to respond to initial activity inquiry questions in their journals and share with the class.

3. Unit Wrap-up

Return to the *Unit Introduction* and revisit student responses to inquiry questions developed in *A Unit Beginning* and/or discuss questions presented in *A Unit End*.

Activity 4: Student Resource Sheet

An issue can be examined from multiple perspectives. While perspectives should be objective and accurate, opinions are subjective and vary among individuals. It is also difficult at times to discern fact from falsehood, objectivity from subjectivity, and accuracy from exaggeration. Sometimes people are knowingly selective in what information they present about a topic. Other times they do not realize that they are presenting only one perspective of the topic.

Perspectives may include:

- *Scientific:* focuses on research to explain natural phenomena (e.g., research regarding the sources of contaminants in a local ecosystem)
- *Technological:* focuses on the development of a product or process for use in society (e.g., use of measurement tools to quantify different contaminants in an ecosystem)
- *Ecological:* focuses on interactions between living organisms and the non-living components of their environment (e.g., research regarding the effects of specific contaminants on plants and animals – including humans)
- *Economic:* focuses on financial aspects of production, distribution, or consumption (e.g., the financial cost of cleaning up contaminants, the cost of dealing with any damage caused by contaminants)
- *Political:* focuses on actions by or processes of government (e.g., laws to control release of contaminants into the environment from human industries)
- *Cultural:* focuses on the beliefs, values, attitudes, norms, and ideas that relate to a specific group of people (e.g., First Nations traditional knowledge about healthy animal populations and ecosystems)

When assessing issues presented in the media, it is important to examine the quality, balance, and fairness of the article.

These terms may be described as:

- *quality*: the accuracy and objectivity of information
- *balance*: inclusion of an appropriate number of perspectives (i.e., multiple perspectives)
- *fairness*: the presence of pros and cons of perspectives (i.e., not selective use of facts)

Activity 4: Student Work Sheet

1. Describe the issue presented in the article.

2. Does the article list facts? List two to three examples.

3. Who are the sources of information? What is their authority (for example their profession or expertise)?

4. Identify one type of perspective that is presented in this article.

5. Does the author also present his/her own subjective opinion? Identify his/her opinion.

6. How could you verify the facts in the article? Provide one example.

7. What is your overall assessment of the accuracy of the article? Exceptionally accurate? Generally accurate? Somewhat accurate? Generally inaccurate? Exceptionally inaccurate? Why?

8. How persuasive is the reporting in the article? Explain.

9. How should the media represent this issue? Is this different from how the media generally represents an issue.

RESOURCES

ADDITIONAL MATERIALS

Supplementary Activity Ideas

1. Keep a journal throughout the unit of your thoughts and reflections.
2. Refer to Reflection Questions in Activity 1 of the Intermediate Unit for a sample student work sheet.

   Other reflection questions may include:

   How did I feel during this activity, presentation, discussion, etc.?
3. Go outside on nature walks! Compare your schoolyard or community with a typical wolf habitat. What are similarities and differences? Do wolves live nearby? Are there any human or other threats to wolf habitat in your area? Conduct research and create a community promotion plan to inform community members and work toward possible solutions.
4. Study wolves in stories and cartoons. How are they portrayed? How do they make you feel? Why do you think wolves are shown to have specific characteristics?
5. Compare a wolf in a fictional story with the facts you have learned about wolves in this unit. For wolf and nature novel ideas refer to Yukon Environment: **www.env.gov.yk.ca/environment-you/nature_novels**

   Alternatively, read a fiction or non-fiction book on wolves and write or perform a review.
6. How do most fairy tales portray wolves? Review several stories and analyze the type of characteristics that are attributed to wolves (e.g., mean, dangerous, always alone). Have students explain why they think wolves are assumed to have these characteristics. Ask students to write a new story, play, or song that shows their understanding of how wolves should be portrayed.

   Alternatively, students could rewrite a story such as: Little Red Riding Hood or The Three Little Pigs and change the story to more accurately reflect the wolf. [Examples of stories available from the wolf's point of view include: The True Story of the Three Little Pigs by John Scieszka – check TB 0124, Little Red Riding Hood Retold by Curtis Johnston available from **students.ou.edu/J/Curtis.N.Johnston-1/LittleRedRidingHoodRetold.html**; see also The Big Bad Wolf: Analyzing Points of View in Texts, available from: **www.readwritethink.org/classroom-resources/lesson-plans/wolf-analyzing-point-view-23.html?tab=4**; stories also available on You-Tube]
7. What were people's attitudes towards wolves in the past and what are they now? Are these attitudes changing? How might a positive image be created for the wolf? Create a radio or television advertisement, newspaper article, poster, poem, song, or another media form to promote change.
8. Draw a picture showing wolves in their natural habitat. Include any facts that will help someone understand the picture.
9. Research the past and present distribution of wolves. Draw a map to show the differences. Find out how wolves are tracked and what kind of information can be acquired through tracking.
10. Find the wolves scientific classification of: kingdom, phylum, class, order, family, genus, and species. If not completed as part of Intermediate Unit, Activity 2, Extension 2, ask students to research how other cultures classify wolves and other wildlife. Or, create your own classification system for a wolf and other animals and plants in the same food web. Create a chart, song, or poem that explains your new classification system.

11. Find a First Nations story on wolves and tell it to a friend or your family. Ask them about any other stories they know about wolves or nature and share these with your class.

12. Research the words for wolf in other languages (e.g., Athapaskan, Gwich'in, Han, Upper Tanana, Northern Tutchone, Southern Tutchone, Tlingit, Tagish, Kaska and/or French, German, Tagalog, or others). Write a story, create a poster, or a painting using words from the language selected.

13. Create a board game using the information you have gathered (wolf characteristics, food web interactions, cultural stories, etc.). Share it with your friends or other classes.

14. Research human impact on wolves and their habitat in the Yukon. What are ways to lessen that impact? Create a personal action plan or a group action plan for your school/community.

15. Explore the Ethical Decision Making kit available through YERS (K 3747). Read these stories with a reading buddy from another grade. You can then create your own rights and responsibilities story, poster, or poem about wolves, their habitat, or related issues of interest.

16. Create a trivia game with Yukon wolf facts you have learned about and researched. Try it with friends or classmates.

17. Review local, national, and international newspaper articles, identify issues and perspectives and have a debate. (Refer to the Intermediate Unit, Activity 7, Identifying Issues Work Sheet to guide you through your research.)

    For other sources of ideas about wildlife issues see:

    Yellowstone to Yukon Conservation Initiative: **y2y.net/our-vision/issues**

    Yukon Fish and Wildlife Management Board: **yfwmb.ca**

18. Nature Canada: **www.naturecanada.ca**

    Hinterland Who's Who: **www.hww.ca/en/issues-and-topics**

    Canadian Wildlife Federation: **cwf-fcf.org/en/discover-wildlife**

19. Create a website for younger students to learn about wolves in the Yukon.

    Alternately, create a video to share with your class, school, or community (maximum three minutes, e.g., online resources like Animoto, Prezi, or computer-based applications such as iMovie, or a slideshow with Keynote or Power Point applications).

20. Create a Yukon Ecotourism plan for a specific region of the territory. Research and develop your ideas about the types of sustainable activities to offer that focus on a holistic approach that incorporates information about the local community, First Nations, ecosystem (abiotic and biotic components), and examples of sustainable practices to implement when visiting your destination. Develop a promotional brochure or advertisement (television or radio advertisement, poster, presentation, website) directed toward your specific audience (e.g., local, national, international visitors, families or school groups, etc.).

21. Use or adapt the Canadian Geographic Lesson: Watch the grey wolves. See the climate changes. This lesson incorporates climate change effects on habitats and the grey wolf as an indicator of climate change. Retrieve lesson plan, resources, evaluation, and worksheet from:
    www.canadiangeographic.ca/wildlife-nature/?path=english/learning-resources/watch-grey-wolves

22. Use or adapt the International Wolf Center online educator resources. International Wolf Center:
    www.wolf.org

Resources include:

Connecting People with Wolves Using Technology, Wolf Research Concepts Course (Grades 9-12, 10 h):
www.wolf.org/learn/educator-resources-wolf-link/wolf-online-curriculum

Gray Wolves, Gray Matter. 27 educational activities available for download from:
www.wolf.org/learn/educator-resources-wolf-link/gray-wolves-gray-matter-2/gwgm-download

Student Self-Assessment

I treated my classmates and teacher with respect.

0	1	2	3	4	5
never	sometimes		mostly		always

Explanation (why I chose this mark):

I tried my best and remained focused on my jobs during this class activity.

0	1	2	3	4	5
never	sometimes		mostly		always

Explanation (why I chose this mark):

I worked cooperatively with my group members during this class activity.

0	1	2	3	4	5
never	sometimes		mostly		always

Explanation (why I chose this mark):

Bibliography

Alaska Department of Fish and Game. *Alaska's Wolves: Activity and Resource Guide*, Fall 1993.

Broderick, Mary Lee. Yukon Environmental Handbook, Part Two: Fall and Spring Activities, A Yukon Teacher's Activity Handbook to Accompany "Exploring Science"

(RedBook) Grade Six Level. Yukon Conservation Society, 1985.

Buck, Rosemary and Snider, Grace. Wolf (Agay) Unit Planfor Grade 7/8: Integrating Language Arts, Social Studies, and Science, St. Elias Community School, May, 1994.

Canadian Wildlife Service, Department of Environment, Government of Canada. *Hinterland Who's Who Series: Wolf*, Supply and Services Canada, 1973.

Department of Renewable Resources, Government of Yukon. *Environment and Conservation Education Resources Binder*, 1992.

Department of Renewable Resources, Government of Yukon. *Yukon Mammal Series: Wolf,* 1989.

Farnell, R. (2009). *Three Decades of Caribou Recovery Programs in Yukon: A Paradigm Shift in Wildlife Management.* Accessed from: /www.env.gov.yk.ca/publications-maps/documents/caribou_recovery_programs.pdf

Forsyth, Adrian. *Mammals of the Canadian Wild*, Camden House Publishing Ltd., 1985.

McClellan, Catharine. A History of the Yukon Indians: Part of the Land, Part of the Water, Douglas and Mclntyre Ltd., 1987.

Ontario Ministry of Education and Ontario Teachers' Federation. *Media Literacy*, 1989.

Porcher, Laura. Yukon Environmental Handbook, Part One: Small Winter Life (A Yukon Teacher's Activity Handbook to Accompany Exploring Science (Green Book), revised, 1990.

Canadian Wildlife Federation, Western Regional Environmental Education Council. *Project WILD: Activity Guide*, 1995.

Robinson, Sandra Chisholm. *The Wonder of Wolves: A Story and Activities*, Roberts Tinehart Inc., 1989.

Wexo, John Bonnett. Zoo Books: *Wolves* (Volume 6, Number 4), Wildlife Education Ltd., 1989.

Yukon Conservation Society. Yukon Wolves: Ecology and Management Issues, 1995.

Yukon Wolf Management Planning Team. *The Yukon Wolf Conservation and Management Plan*, Department of Renewable Resources, Government of Yukon, 1992.

Zarki, Joseph. *Getting to Know the Wolf: A Teacher's Guide to the "Wolf Pac" Materials*, A School Outreach Project of the National Park Service, Yellowstone Association for Natural Science, History, and Education Inc, 1989.

Online Resources

BBC Nature: www.bbc.co.uk/nature/life/Gray_Wolf

- Includes several wolf videos such as Planet Earth "Wolf Hunt", Frozen Planet "Six hungry mouths"

Canadian Museum of Nature, Nature History Notebooks, Wolf: www.nature.ca/notebooks/english/wolf.htm

Canadian Geographic: www.canadiangeographic.ca/wildlife-nature/?path=english/species/grey-wolf

Canadian Wildlife Federation, Canadian Wildlife Lesson Plans:
cwf-fcf.org/en/discover-wildlife/resources/lesson-plans

CircumArctic Rangifer Monitoring and Assessment Network (CARMA). Information about migratory caribou herds, herd data, Voices of the Indigenous Peoples of the North, and other projects. www.caff.is/carma

Environment Yukon, Environment Education Links: www.env.gov.yk.ca/environment-you/websites

Environment Yukon: Grey Wolf: www.env.gov.yk.ca/animals-habitat/mammals/documents/Grey_wolf.pdf

Environment Yukon: Wolf: www.env.gov.yk.ca/animals-habitat/mammals/wolf

Environment Yukon. Porcupine Caribou Herd:
www.env.gov.yk.ca/hunting-fishing-trapping/porcupine_caribou_herd

Hinterland Who's Who: www.hww.ca/en/wildlife/mammals/wolf

- Includes a wolf video, audio, and lesson plans

International Wolf Center: www.wolf.org

- Wolf information, education resources (e.g., Gray Wolves, Gray Matter 27 activities available for download from: www.wolf.org/learn/educator-resources-wolf-link/gray-wolves-gray-matter-2/gwgm-download
- Wolves of the World: www.wolf.org/wow/world
- Biology and Behavior: www.wolf.org/learn/basic-wolf-info/biology-and-behavior
- Wild Kids: vocabulary, facts, colouring book, wolf mask, articles, and WolfQuest game: www.wolf.org/learn/wild-kids
- Headlines: Current News Items (U.S.): www.wolf.org/learn/wolf-news/headlines
- Podcasts: www.wolf.org/learn/wolf-news/podcasts

National Film Board Videos. Retrieved from: www.nfb.ca/film/wolf_pack

- "Wolf Pack", 1974, 19 min 58 s

  Filmed by Bill Mason in caribou country, this nature film closely observes wolves through late winter into early spring. "Wolf Pack" shows this creature's character, behaviour and life cycle. What emerges is a portrait of the wolf as a disciplined hunter, respected leader and committed parent.

- "Death of a Legend", 1971, 49 min 30 s

  This documentary film by Bill Mason is about wolves and the negative myths surrounding the animal. Exceptional footage portrays the wolf's life cycle and the social organization of the pack, as well as other film of caribou, moose, deer and bison.

- "Cry of the Wild", 1972, 88 min 4 s

  This feature-length documentary from Bill Mason imparts his affection for the big northern timber wolves and the pure-white Arctic wolves. Filmed over three years in the Northwest Territories, British Columbia, the High Arctic and his home near the Gatineau Hills in Quebec, Mason sets out to dispel the myth of the bloodthirsty wolf. Going beyond the wolf's natural habitat, Mason relocated three young wolves to his own property and was able to film tribal customs, mating and birth. As a result, Cry of the Wild offers viewers access to moments in wildlife never before seen on film.

National Geographic: animals.nationalgeographic.com/animals/mammals/wolf

Parks Canada, Learn & Discover: www.pc.gc.ca/eng/apprend-learn/index.aspx
(e.g., species at risk, National Parks – Kluane information)

Porcupine Caribou Management Board: www.pcmb.ca

Project Caribou: taiga.net/projectcaribou/index.html

- Resource information about caribou in North America, K-12 activities (including downloadable pdfs), caribou news weblog, and other items! e.g., All About Caribou: taiga.net/projectcaribou/pdf/allaboutcaribou.PDF

Sample online wolf article sources

- The Star. March 2014. "Caribou count finds iconic Porcupine herd thriving in North." www.thestar.com/news/canada/2014/03/16/caribou_count_finds_iconic_porcupine_herd_thriving_in_north
- National Parks Traveller. February 2014. Alaska Fish and Game Employees Kill Entire Yukon-Charley Rivers National Preserve Wolf Pack. www.nationalparkstraveler.com/2014/02/alaska-fish-and-game-employees-kill-entire-yukon-charley-rivers-national-preserve-wolf-pack24731
- CBC. January 2014. "Wolves kill 2 dogs in Teslin, Yukon." www.cbc.ca/news/canada/north/wolves-kill-2-dogs-in-teslin-yukon-1.2485929
- Moore, D. "U.S. considers lifting hunting ban on grey wolves imported from Canada." The Canadian Press, Jan 20 2014. Retrieved from: www.thestar.com/news/canada/2014/01/20/us_considers_lifting_hunting_ban_on_grey_wolves_imported_from_canada
- Yukon News. May 2013. Whitehorse resident charges for shooting wolves. www.yukon-news.com/news/whitehorse-resident-charged-for-shooting-wolves
- University of California Berkeley, Press release March 2005
"Wolves alleviate impact of climate change on food supply, finds new study" Sarah Yang University of California Berkeley. Retrieved from: berkeley.edu/news/media/releases/2005/03/21_wolvesclimate.shtml
- Savage, C. "The ripple effect – When 31 Canadian wolves were relocated to Yellowstone National Park, the impact was swift and surprising." Canadian Geographic, September/October 2003. Retrieved from: www.canadiangeographic.ca/wildlife-nature/articles/pdfs/grey-wolf-the-ripple-effect.pdf
- International Wolf Center. Current News Items. /www.wolf.org/learn/wolf-news/headlines
- The Wildlife News. E.g., Yellowstone 19 years after wolf re-introduction. www.thewildlifenews.com/category/wolves/yellowstone-wolves
- The New York Times. Science – Wolves articles. topics.nytimes.com/top/news/science/topics/wolves
- National Science Foundation News: www.nsf.gov/news
- BBC News, Science & Environment: www.bbc.com/news/science_and_environment

Fact Sheet

WOLVES IN YUKON

Latin name: **Canis Lupus**

Life Cycle

Breeding
- only the dominant pair breeds
- females are sexually mature at 2 years
- wolves breed once a year in March
- 63 day gestation period
- the pregnant female searches for a suitable den site, usually a hole dug in the ground

Birth of Pups
- usually 5-6 in a litter
- born in early to mid-May in the den
- the pups weight about 400 grams each

Growth of Pups
- the pups are born blind; at around 12 days, they open their eyes, which are blue and then change to yellow at around 2 months old
- walk at 2 - 3 weeks old
- they feed on their mother's milk for the first few weeks, then all pack members supply alternative food diisgorged from their stomachs. If insufficient, pups still have access to milk for up to about 10 weeks .lack of food causes many pups to die
- play in very impotant activity for pups, teaching social and hunting skills
- By 3 months, wolf pups are able to travel with the pack and between 4- 10 months the juveniles become sufficiently mobile to join adult hunts

Life Span
- average life span is 4-5 years
- death occurs most often from wounds received during wolf fights or during hunting from hooves, antlers or horns, starvation or human-related factors including hunting and trapping

Size and Appearance
- wolves found in the Yukon are the largest subspecies in North America average male: 43 kg average female: 37 kg
- length, from the tip of nose to tip of tail: male
  1.5-2 m female 1.35-1.85 m
  tail is 33-51 cm of this length
- height at shoulder 64 - 82 cm
- have 42 teeth
- colour can range from white to jet black; most common is a mixture of gray and white with tan on the ears and shoulders

Distribution

- Arctic: Alaska, Canada, Russia and Scandanavia
- wolves are returning to many of the northern states of USA
- also found in Europe, Middle East and India
- occupy entire Yukon, except Kluane ice field

Populations

- about 4500 - 5000 in Yukon
- average density in the Yukon is about 7 wolves/ 1000 km2
- highest density in the Yukon: 18/1000km^2 in Teslin burn, corresponds to high density of moose
- lowest density in the Yukon: 3/1000km^2 in Northern Yukon where moose is rare and caribou unpredictable
- world population is about 150,000; Canadian population is about 53,000- 58,000
- wolf populations respond to the amount of food available, effects of weather, demographics and human impacts

Packs

Prey

- groupings of wolves that live and hunt together
- average is 6-8 in a pack
- pack members are ranked from the dominant or Alpha pair (the only pair to breed), to the subordinates, the yearlings and the pups
- all wolves have a biological urge to reproduce, they will compete (fight) to be part of the breeding pair; if unsuccessful, they often leave the pack to find another chance to reproduce thus encouraging genetic mixing
- defend their territory of about 600 - 1000 square km
- moose, dall sheep and caribou are the primary prey species; other prey includes beaver, muskrat, snowshoe hare, waterfowl on Old Crow Flats and carrion.
- moose is the primary prey species in the south; caribou, in the north; and dall sheep, in the Kluane area
- most moosekills are calves, yearlings and older aged moose as they are the most vulnerable and easiest to kill, but any moose may be killed by a wolf
- 1 moose is killed for every 10 attempts
- a moose-hunting wolf will kill 6-8 moose a year, a caribou-hunting wolf will kill 15-18 caribou a year

Winter

- winter is the best time for hunting
- pack bond is the strongest
- snow and cold is hard work for ungulates, they tend to group together
- wolves have long legs and large paws that act like as snowshoes to help them travel easily through snow; they travel in a single file
- pups nearly adult size

Sources

Canadian Wildlife Service, Department of Environment, Government of Canada. Hinterland Who's WhoSeries:

Wolf, Supply and Services Canada 1973

Department of Renewable Resources, Government of Yukon. Yukon Mammal Series: Wolf, 1992.

Mech and Boitani, Wolves Behaviour, Ecology and Conservation, 2003

[Yukon Wolf and Conservation Management Plan]

Sample Lesson Plans

Preface: This lesson is specific to a wolf tracking program which was run near Old Crow, Yukon in the early 1990's. Although this data is no longer available or happening in real time, this lesson plan is provided as an interesting example of what wolf biologists have done in the past and can encourage the discussion of what do wolf biologists do now.

Wolf Tracks

Teacher: B. Markowsky

School: Chief Zzeh Gittlit School, Old Crow, YT

Prerequisites:

These could be individual lead up lessons.

1. Basic map reading and plotting skills
2. How a radio monitoring system is used to study animals.
3. How a satellite collar (ARGOS) monitoring system is used to study animals.

2 and 3 are ideal for a "compare and contrast" learning strategy assignment.

Objectives:

Students will be able to:

1. Plot the movement of animals on a map using data from the ARGOS system.
2. Understand the inter-relatedness of animal movements eg. wolves/caribou.
3. Understand the life cycle and habits of a wolf pack.

Method:

- Students learn about the monitoring of animals using radio collars and Satellite collars from a wildlife biologist.

- Students compare and contrast the two monitoring systems after studying actual models of the two devices that are collared onto animals.

- Students will receive, plot and monitor satellite data from wolf pack #3056 from April/93 to April/94.

Compare and contrast the two monitoring systems. This is an excellent co-operative learning small group learning strategy.

1. Review basic map reading skills including the plotting of latitude and longitude points on a map.
2. Hand out photocopies of student maps.

3. Collect, edit and distribute the information from the North Slope WoH Satellite Locations, (weekly or bi-weekly)
4. Plot the data on the classroom map. (weekly or bi-weekly)
5. Students plot the data on their own maps.
6. Study and discuss the movements of the wolf pack.
7. Correlate the movement of the wolf pack with local reports of caribou- north of Old Crow early last winter.
8. Note the date the wolf pack passed Old Crow.
9. Note the present location of the wolf pack.
10. Study and learn the habitat, life cycle and habitats of a wolf pack. Suggested heading: Range/Territory, Social Structure, Breeding, Communications, Hunting, Solo Wolves.
11. Prepare bulletin board display of WoH Tracks Unit - materials, photographs, maps, charts, student work, etc.

Wolf (Aaav) Unit Plan for Grade 7/8

Integrating Language Arts, Social Studies, and Science

Teachers: Rosemary Buck and Grace Snider

St. Elias Community School

May, 1994

Objectives:

1. Students will gain an appreciation and respect for other perspectives by examining the term “bias”.
2. Students will gain knowledge and understanding about wolves and their characteristics.
3. Students will gain knowledge and appreciation of the spiritual, cultural, economic, and inherent value of wolves.

The Unit Overview

Week 1: How We View(ed) the Wolf (Agay)

Language Arts

- have students discuss why studying wolves in the Yukon is important
- discuss the term “bias” using the media articles; have students explain and record their own bias
- students examine the images of wolves shown in European/N. American fables and how these have helped to create their bias; students dramatize one of these fables (in groups)
- Novel Study - “Julie of the Wolves”; students focus on wolf behaviour through this novel; examine the bias of Jean Craighead George
- reflective journals to be kept throughout the unit

Resources:

1. A selection of newspaper and magazine articles with distinct bias.
2. A selection of fables involving wolves.
3. Examples of bias, not relating to wolves and a working definition of the term.

Social Studies

- students brainstorm all of the ways the wolf is viewed/used in society; using papers, books, articles, t.v. programs, cartoons, etc. have students evaluate society’s changing perspective of the wolf
- students read and discuss First Nations’ stories about the wolf

- students listen to stories from local elders and have the significance of the perspective explained by a local First Nations resource person
- have a local First Nations resource person explain the significance of the Wolf (Agay) and Raven (Ts'urk'i) clan symbols

Resources:

1. Ron Chambers (Haines Junction) and local elders.
2. Part of the Land. Part of the Water or any First Nations stories about the wolf.
3. Any written or pictorial information on wolves.

Science

- students brainstorm the locations where wolves are found
- students examine the historical and current distribution of wolf populations and hypothesize the causes for the reduced distribution of wolves
- students examine a case study of Russian wolf distribution
- students research, write, and display a case study of wolves in a region of their choice
- guest speakers from Renewable Resources to explain how wolves are studied (tracking, field work); field trip to Kluane National Park to examine wolf tracking equipment

Resources:

1. Global and local wolf distributions (past and present) from Wolf Theme Box at the Learning Resource Centre.
2. Wild Hunters. World Wildlife Federation.
3. Wolves of Isle Royale - filmstrip and audiotape from L.R.C.
4. Kluane National Park Warden and/or Biologist from Renewable Resources

Art

- students create a collage of wolf images

Resources:

- A variety of wolf images.

Week 2 & 3 Characteristics of the Wolf (Aaav)

Language Arts (*L.A. and S.S. activities overlap to create a double block)*

- students study the communication and behaviour of wolves
- students compare and contrast realistic behaviour to fictional descriptions (Julie of the Wolves and cartoon characters)
- anthropocentrism and anthropomorphism discussion
- students examine the life cycle of a wolf under the heading “What Does a Wolf Need to Survive?” (Continue in S.S.)
- students create a biography of a wolf (A Week in the Life of a Wolf)

Resources:

1. NFB film “Cry of the Wild”.
2. “Julie of the Wolves”.
3. Any information on wolf behaviour e.g. “Looking at the Wolf” by Teton Science School.
4. Disney Films and cartoons depicting anthropomorphic ideas.

Social Studies *(L.A. and S.S. activities overlap to create a double block)*

- students examine pack and denning behaviour
- students visit a den site
- students map or create a model of the tunnel system at the den site

Resources:

1. Dan Drummond or guest from Renewable Resources
2. Information on the life cycle of a wolf
3. “Wolf Ecology in the Kluane Region, Yukon Territory”, by Ronald S. Sumanik, Renewable Resources

Science

- students examine heads, skulls, skeletal structure, and pelts of wolves
- students prepare a wolf skull using wolf heads provided by Renewable Resources (groups of 2-3 per skull and 10 45-minute classes)
- Wolf Biologist to explain the anatomy of a wolf
- students research and answer the questions:

1. How is a wolf built?

2. Why is a wolf built the way it is?

Resources:

1. “Looking at the Wolf” by Teton Science School.
2. Wolf skulls and a pelt from Renewable Resources.
3. Wolf Technician/Biologist, Renewable Resources.
4. Wolf heads - 1 for each 2-3 students to prepare.

Art

- carving
- wolves and symbols e.g. logos

Week 4: The Future of the Woif (Aqay)

Language Arts and Social Studies

- students will brainstorm ideas on “the value of a wolf” (economic, spiritual, aesthetic, cultural - clan symbols, personal)
- in groups, students will prepare questions for the panel discussion
- panel discussion to include people with a wide variety of perspectives;
- panel members will answer the question “What is the value of a wolf?”
- students will check their bias assignment for attitude changes using the categories:

My bias *What I learned* *What I feel now* *Questions*

- students will participate in a debate over a resolution surrounding a wolf issue of their choice
- students will do a “Futures Time Line” to predict what the probable and their preferred futures are for wolves (see Attachment for explanation of Futures Time Line)
- students evaluate the unit

Resources:

Potential Panel Members: Ron Chambers, Alec Vanbibber, Bill Brewster, Scott Gilbert, Will Jones, Wolf Riedl, Alan Baer, Ray Breneman, Rob Moore, Bob Jickling, Dan Drummond, Bob Hayes, Liz Hofer, Rosalie Washington, Louise Profeit-Leblanc, CYI Resource People, Joanie McKinnon

Science

- students learn about wolf management from a Renewable Resources

- Biologist and from the Probe 8 science text
- students will be applying management terms to the Aishihik Wolf Kill project
- Project Wild activities that focus on management terms and techniques can be used here
- students will respond to the question - “Why manage wolves?” by examining the Wolf Conservation and Management Plan from Y.T.G.
- students will create dilemma cards surrounding wolf issues and use the cards to foster discussion

Resources:

1. Wolf Biologist from Renewable Resources
2. Science Probe 8 text
3. Project Wild Activities: “Muskox Maneuvers”, “Quick Frozen Critters”, “The Thicket Game”, and “Web of Life”
4. Finlayson Caribou Herd video from Renewable Resources
5. “Wolf Conservation and Management Plan” from the Department of Renewable Resources

Invaluable Materials for the Wolf Unit

- Teacher’s Guide from the Primary Wolf Theme Box from the Learning Resource Centre
- “Alaska’s Wolves; Activity and Resource Guide, Fall 1993”, Alaska Department of Fish and Game (267-2241)
- “Cry of the Wild”, National Film Board
- “Death of a Legend”, National Film Board
- “Never Cry Wolf”, film of Farley Mowat’s book

Evaluation of the Wolf/Agay Unit

If you really enjoyed the activity give it: ***

If you sort-of enjoyed the activity give it: * *

If you didn't enjoy the activity give it: *

1.	Exploring bias activities	
2.	Reading and viewing fables	
3.	Reflective Journal writing	
4.	Role Playing one of the fables	
5.	The book "Julie of the Wolves"	
6.	Creating a bias essay	
7.	Trip to visit Ron & Grace Chambers at the Elders Complex.	
8.	Exploring wolf behavior and communication	
9.	Trip to wolf den	
10.	Exploring Anthropocentric and Anthropomorphic views (Through Disney Cartoons)	
11.	Film "Death of a Legend"	
12.	Essay "A week in the life of a wolf"	
13.	Panel discussion	
14.	Review of your bias essay	
15.	Classroom Debate	

Your Input:

What activities would like more of?

What activities could we add?

Materials available from Yukon Education Resource Services

All about Animals Wolf
[Video] Call #: DVD 0833
British Broadcasting Corporation
Location: Learning Resource Centre
Series: All about animals. Season 2 ; Episode 4
Published 2009
Interest Level: K-3

All about-- Canadian animals
[Kit] Call #: K 3817
McDermott, Barb.
Location: Learning Resource Centre
Series: All about--
Published 1998

Animals
[Kit] Call #: TB 0132
Location: Learning Resource Centre

Arctic wolf - Bathurst Island, NWT.
[Graphic] Call #: SP 0170
Location: Learning Resource Centre

Au pays des loups.
[Book] Call #: FVT 0627
Location: Learning Resource Centre
Published 1977

Call of the Wolves
[Book] Call #: BB 3082 Berger, Melvin.
Location: Learning Resource Centre
Published 1995

Curious creatures
[Kit] Call #: K 3219
Location: Learning Resource Centre
Series: Reading success
Published 1997

Death of a legend
[Video] Call #: VT 0296
Location: Learning Resource Centre
Published 1971

Dogs.
[Kit] Call #: TB 0018
Location: Learning Resource Centre

Endangered species : mammals.
[Graphic] Call #: SP 0064
Location: Learning Resource Centre

Ethical decision making conservation is everyone's business.
[Kit] Call #: K 3747
Location: Learning Resource Centre
Published 1998

Fractured fairy tales.
[Kit] Call #: TB 0124
Location: Learning Resource Centre

Julie of the wolves
[Kit] Call #: K 4016
George, Jean Craighead, 1919-
Location: Learning Resource Centre
Published 2003

Learning to be strong
[Kit] Call #: K 3752
Location: Learning Resource Centre
Published 2002

Never cry wolf
[Kit] Call #: K 3335 Mowat, Farley.
Location: Learning Resource Centre
Published 2000

Northern Animals #2.
[Kit] Call #: TB 0140
Location: Learning Resource Centre

There will be wolves
[Kit] Call #: K 3321
Bradford, Karleen.
Location: Learning Resource Centre
Published 2000

The untamed world, two
[Kit] Call #: K 3517
Linda Aspen-Baxter
Location: Learning Resource Centre
Series: The untamed world
Published 1998

What's the time, Mr. Wolf?
[Book] Call #: BB 2221
Location: Learning Resource Centre
Published 1984

Wild encounters, volume four 1. Wolves ; 2. Caribou
[Video] Call #: DVD 0068
producer, Albert Karvonen;
director, Doug Steele.
Location: Learning Resource Centre
Published 2002

Wolf pack.
[Kit] Call #: TB 0111
Location: Learning Resource Centre
Contents:
36 student books, 4 teacher resources, 2 sound cassettes, 1 kit

- The Alaska wolf
- Alaska's wolves : activity and resource guide
- Amorak
- The boy who cried wolf
- The call of the wolves
- The eyes of Grey Wolf
- Julie of the wolves
- The language and music of the wolves [sound cassette]
- The moon of the grey wolves
- Silver wolf
- Teacher information 1
- Teacher information 2
- To the top of the world
- Wild, wild wolves (4)
- Wolf Island
- Wolf pack : tracking wolves in the wild
- Wolf : wild hunter of North America
- Wolves / Candace Savage
- Wolves / R.D. Lawrence
- Wolves / Seymour Simon
- Wolves for kids
- The wolves of Isle Royale (4)
- Wolves of Isle Royale [sound cassette]
- The wonder of wolves (11)
- Yukon wolves
- Scientific explorer Timber wolf kit (contents: 1 Timber wolf information, 1 Tracking Activity, 1 Timber wolf track cast.)
- One Wolf Howls
- Wolves: A Yukon learning resource [teacher resource].

Wolves.
[Kit] Call #: TB 0069
Location: Learning Resource Centre
Contents:
49 student books, 6 teacher resources, 1 sound cassette, 1 videocassette

- Alaska's wolves : activity and resource guide [teacher resource]
- The arctic wolf
- Baby wolf
- Biography of a wolf (8)
- The boy who cried wolf (2)
- Call of the wolves (2)
- Foxes and wolves
- Getting to know the wolf : a teacher's guide to the 'Wolf-Pac' materials [teacher resource]
- Julie and the wolves
- The language and music of the wolves [sound cassette]
- Lobo, the timberwolf (6)
- Mary of Mile 18
- More information on wolves [teacher resource]
- Peter and the wolf
- A race with the wolves
- Silver wolf
- Teacher information
- Walter the wolf
- Wild, wild wolves (2)
- The wolf
- Wolf [videocassette]
- Wolf Island (2)
- Wolf pack : tracking wolves in the wild
- Wolves / J. Ross
- Wolves / R.D. Lawrence
- Wolves / S. Simon
- Wolves : a Yukon learning resource [teacher resource]
- Wolves and humans [teacher resource]
- Wolves for kids
- Wonder of wolves (5)
- Yukon wolves (2)

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