



ROYAL BC
MUSEUM



Wolves

HSBC  School Visits Programs

Teachers' Guide

Grade K – 2



Wolves

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Program Level: Grades K, 1, 2

Program Length: 75 minutes

Introduction

The Gray Wolf (*Canis lupus*) is the largest wild dog in North America, others being coyotes and foxes. Worldwide, the Gray Wolf has the largest natural range of any land mammal other than humans. This interactive program will look at the lives of wolves; how they are adapted to their environment, the structure of wolf packs, and how they hunt and how they have been viewed by First Nations.

Using material from the Royal BC Museum collections and those of the BC Archives, students will see and use primary resources to gain a better understanding of this elusive and often feared animal.

Prescribed Learning Outcomes

This program is designed to fulfil the following prescribed learning outcomes as stated in the Ministry of Education's Integrated Resource Package.

Kindergarten

Science

Life Science

Describe features of local plants and animals

Process of Science

Use the five senses to make observations

Earth and Space Science: Surroundings

Demonstrate the ability to observe their surroundings

Dance

Movements to represent characters, themes and topics

Grade 1

Science

Life Science

Describe the basic needs of plants and animals

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

Students become aware that all living things, including themselves, have needs, but that particular needs of individual organisms may be unique.

Earth and Space Science: Daily and Seasonal Changes

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

Process of Science

Communicate their observations, experiences, and thinking in a variety of ways (verbally, graphically, physically – movement)

Dance

Movements to represent character, themes and topics

Grade 1

Science

Life Science

Describe the basic needs of plants and animals

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

Students become aware that all living things, including themselves, have needs, but that particular needs of individual organisms may be unique.

Earth and Space Science: Daily and Seasonal Changes

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

Process of Science

Communicate their observations, experiences, and thinking in a variety of ways (verbally, graphically, physically – movement)

Dance

Movements to represent character, themes and topics

Grade 2

Science

Life Science

Classify familiar animals according to similarities and differences in appearance, behavior, and life cycles

Describe some changes that affect animals (migration, decline in populations)

Describe how animals are important in the lives of Aboriginal peoples in BC

Describe ways in which animals are important to other living things and environment

Process of Science

Use their senses to interpret observations

Infer the probable outcome of an event or behavior based on observations

Dance

movement sequences based on patterns, characters, themes, and topics

Pre-Visit Instructions

The students will be divided into 3 **groups during the introduction**. If you have any concerns about how students are divided into the groups, please speak to the docent prior to the introduction. If possible students should wear nametags.

Volunteer docents will guide the students through their program. Each group will work its way through **two stations in the Natural History Gallery** and **one station in the First Peoples Gallery**. Students may not go through each station in the order presented below, but rather may start at any station and proceed through each of them until they have completed all three stations and reunite in the classroom for the conclusion.

A short [orientation video](#) regarding school visits is available on our website. Feel free to preview it and share with your students. Knowing what to expect at the museum will help your students focus on learning.

General Background Information

The Gray or Timber Wolf (*Canis lupus*) is the largest wild dog in North America, others being coyotes and foxes. An adult Gray Wolf averages 1.5 to 2 metres in length and weighs up to 80 kg. It has long legs and large feet and stands about 65 to 90 cm. at the shoulder. The colour is variable and can be black, brown, or white but is generally grey with yellow or red colouration, black patches on the back and sides and white on the chest and abdomen.

RANGE

Worldwide, wolves have the largest natural range of any land mammal other than humans. Historically they occurred over much of Europe, Asia and North America but have been eliminated by humans over much of their range.

In Canada, wolves number about 50,000 to 60,000 and occupy approximately 84% of their original range. In British Columbia it is estimated that there are approximately 7,500 wolves primarily in central and northern British Columbia and on Vancouver Island. (Hatler, 2008, pg 79)

PACK STRUCTURE

Wolf packs usually consist of ten or fewer related individuals, seven or eight is average. Pack size varies with birth and death of pups, adult mortality and voluntary/involuntary dispersal of pack members. In BC and Alaska packs have included over 30 individuals. The pack can travel 15 to 25 km a day in the search for food. Each pack will defend a territory of 130 to 13,000 sq. km, from neighbouring packs. The size of a pack's territory depends on the time of year, (summer territories are often smaller than winter territories), number of wolves in the pack and the abundance of prey in the territory. (Hatler, 2008, pg 85)

ADAPTATIONS TO THE ENVIRONMENT

The wolf is superbly adapted to a wide variety of habitats, enabling it to live in various habitats from forests and prairies to arctic tundra. This ability to live in a wide variety of habitats has enabled the wolf to inhabit most regions of the northern hemisphere and survive persecution by man.

Large feet allow the wolf to run on snow without breaking through, easily overtaking hoofed animals such as deer and moose whose feet break through causing the animal to flounder in deep snow. Dense fur allows the wolf to survive in northern areas where winters are cold including arctic regions.

SENSES

The wolf's keenest senses are its sense of smell and hearing. Vision comes in third, merely confirming what the wolf already knows through its nose and ears.

Smell

Wolves have a very acute sense of smell. Scientists estimate that a wolf's sense of smell is a million times better than a human's. Scent plays an important role in locating and tracking prey, and in the recognition of non-prey animals including other wolves. Wolves have been known to detect prey by scent at distances up to three kilometers. Wolves have several specialized scent glands that they use to identify each other. The scent from these glands is as individual as our fingerprints allowing wolves to recognize other wolves, even when they cannot see them.

Hearing

A wolf's hearing is far superior to a human's. Wolves can hear each other howling in the distance when a human might hear nothing.

Sight

Even though it ranks behind their sense of hearing and smell, wolves still have keen eyesight that can detect even the slightest movement in front of them. Since they are predators their eyes are on the front of their heads, giving them a little less than 180° vision. Their prey species can see over 300° of a circle.

COMMUNICATION

Wolves use three different languages:

1. Body Language - Body Positions and Movements and Facial Expressions.

Used largely to show dominance. The dominance "rules" helps keep order in the pack and keeps the wolves from hurting each other.

2. Sound - Howls, Barks, Whimpers and Growls.

Barking and growling are usually used as a warning. Whimpering can mean "I give up" or a mother's willingness to nurse her young. Howling is used for long-distance communication. It can be either defensive or social.

3. Special Scents - Scat, Urine and Pheromones.

Wolves mark their territory with urine and scat. This is called scent marking. When wolves smell the scent left by another pack, they know that an area is already occupied. Pack members use scent to identify each other.

From: International Wolf Centre <http://www.wolf.org/wolves/learn/basic/biology/communication.asp>

Downloaded 09/08/11

PREY/ HUNTING

Wolves eat a variety of animals including deer, moose, caribou, rabbits, and mice. They will kill whatever is easiest; generally this means sick, injured, old, young or weak individuals. The killing of weak and sick individuals keeps the population of prey species healthy.

One wolf will generally eat the equivalent of 15 deer each year plus other food. They can eat 1/5 their body weight at one time. However this feast may have to last three or four days before the wolf eats again. (Hatler, 2008, pg 84)

FIRST PEOPLES

Art served two main purposes in coastal Indian life. On one hand it is a crest art – a totem pole, dancing headdress, house-frontal painting, or decorated blanket signaling the owner's mythic origins. This was most highly developed amount the northernmost tribes where inheritance was through the female line, although it was also entrenched among the Kwakwaka'wakw. Crest art was emphasized during potlatches and feasts and as such verified and validated the social system. (MacNair, 1984, pg 23)

On the other hand, art made the supernatural world visible. The incredible array of creatures – human, animal and mythic – that inhabit the minds and landscape of Northwest Coast people are realized through the medium of dance dramas. (MacNair, 1984, pg 23).

Wolf can be identified by its tall ears, long snout and lots of teeth. The tail may be bushy and curled or straight and black-tipped, depending on the cultural tradition. (Stewart, 1993, pg 37)

Program Itinerary

The Classroom

The entire class will be gathered in the classroom for both the introduction and conclusion. In the introduction, students will hear about what they will do during their visit and share some basic information about wolves.

They will discuss/do the following:

- discuss pack structure and leadership
- break into different packs based on scent (Docents will dab some vanilla, lemon or maple extract on students wrists during the intro. Students will “sniff” out members who have the same smell as they do.)
- explore how wolves communicate with body language (Docents will encourage students to move as a pack through the museum – using their bodies to express different emotions such as fear, playfulness etc.)

The “Den”

The “Den” is a new activity space, designed and opened just this year to host school programs. Recycled and organic materials have been used as much as possible to make a stimulating and child-friendly environment.

Lesson Plan

At this station students are introduced to the wolf and the various physical factors that make it an efficient predator and allow it to live in many different habitats and climates.

They will discuss/do the following:

- examine a wolf mount
- discuss the wolf’s physical features and range
- experience how a wolf’s feet help it to hunt in the snow when they strap on oversized shoes and walk through a ball pit

Forest Diorama

This domed area representing four different types of forests found in British Columbia, is a favourite for many of our visitors. This open diorama features mammals, birds, plants and trees from around the province.

Lesson Plan

At this station students discuss the different prey species of the wolf and techniques that wolves use to locate, track and capture prey.

They discuss/do the following:

- howl to call the members of their pack together (and enjoy the fantastic acoustics of the dome)
- observe a wolf's skull
- play a game to understand how vision affects a wolf's ability to hunt and a prey's ability to escape
- identify different prey species of the wolf

First Peoples Gallery

The First Peoples Gallery describes the cultures of the aboriginal peoples in what is now British Columbia. The first part of the exhibition, on the mezzanine level, contrasts traditional technologies of the Coast and the Interior of the province. The second section outlines cultural changes from the arrival of Europeans to the banning of the potlatch, showing some of the devastating effects of colonization on the aboriginal way of life. The final section, where our station will take place, concentrates on the arts and ways of life that have survived and flourish today.

Lesson Plan

Focusing on Kwakwaka'wakw art, students will hear how the worlds of humans and animals are connected for First Nations. They will learn some of the things that Wolf can represent.

They will discuss/do the following:

- Identify features of "Wolf" found in different art
- Discuss what a "crest" image is
- Hear a legend

Pre-Visit and Follow-up Activities: Wolves

Pre-Visit Activity:

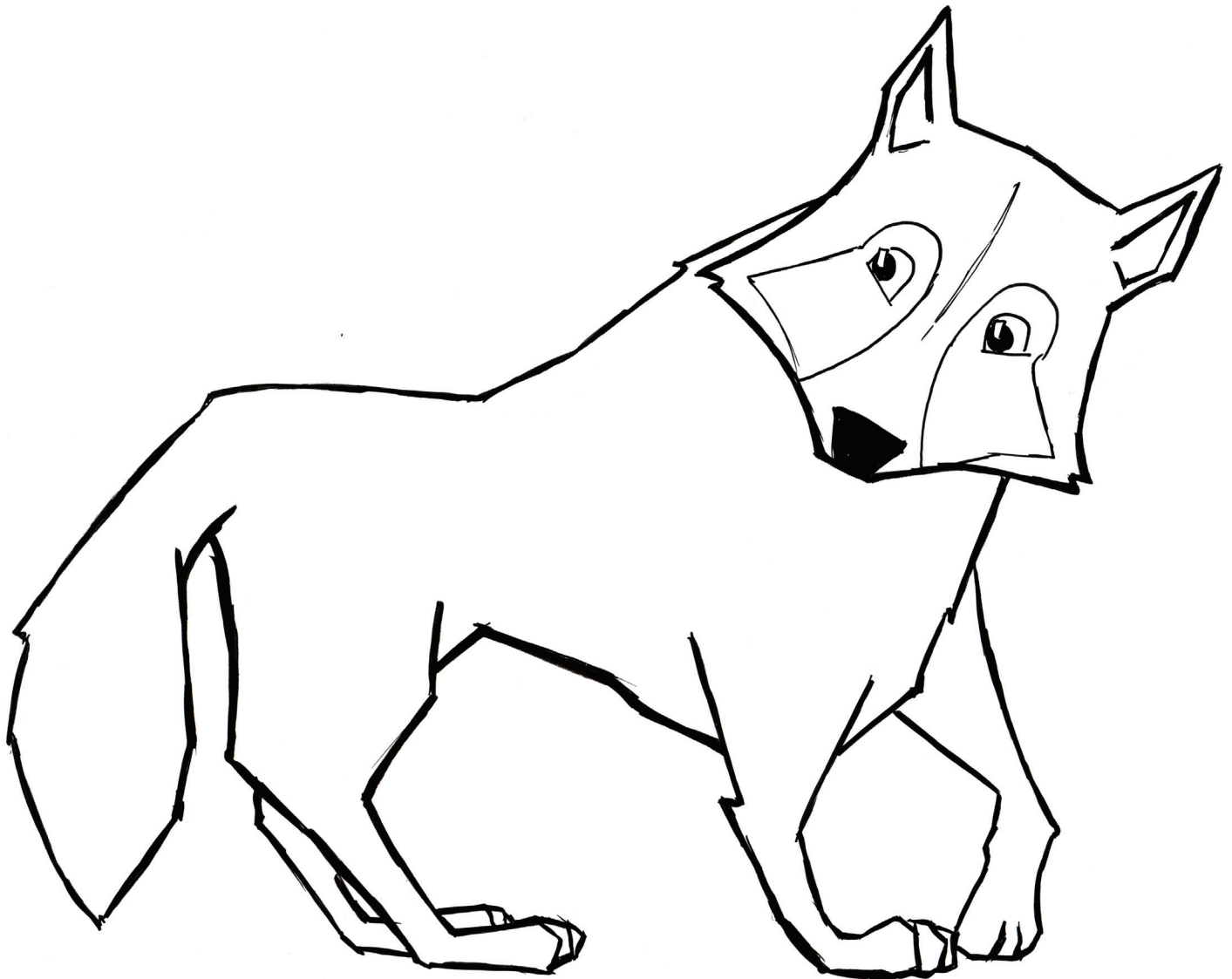
Activities

1. Read a fairy tale or a folk tale that involves a wolf. (See the resource section for ideas). After reading the story discuss how the wolf was portrayed. Was it a good character or a bad character? Did it make the students like wolves or dislike wolves? How could the story be told to make the wolf a good character?
2. Watch a video of wolves in the wild and observe their behavior. Discuss how the wolves might be seen to be communicating with one another. (See the resource section for web links).
3. Wolves can eat up to $\frac{1}{5}$ of their own body weight at one time. How many hamburgers would students have to eat to equal $\frac{1}{5}$ their body weight? Assuming that an average hamburger weighs 112 grams ($\frac{1}{4}$ pound). Calculate how many hamburgers an average student would have to eat, e.g. a 22.5 kg (50 lb) child would have to eat $\frac{1}{5} \times 50 = 10$ lbs. or $10 \times 4 = 40$ - $\frac{1}{4}$ lb. hamburgers to equal $\frac{1}{5}$ their body weight.

Print copies of the desired worksheets for your class to do either before or after their visit.

Gray Wolf Colouring Sheet

Name: _____

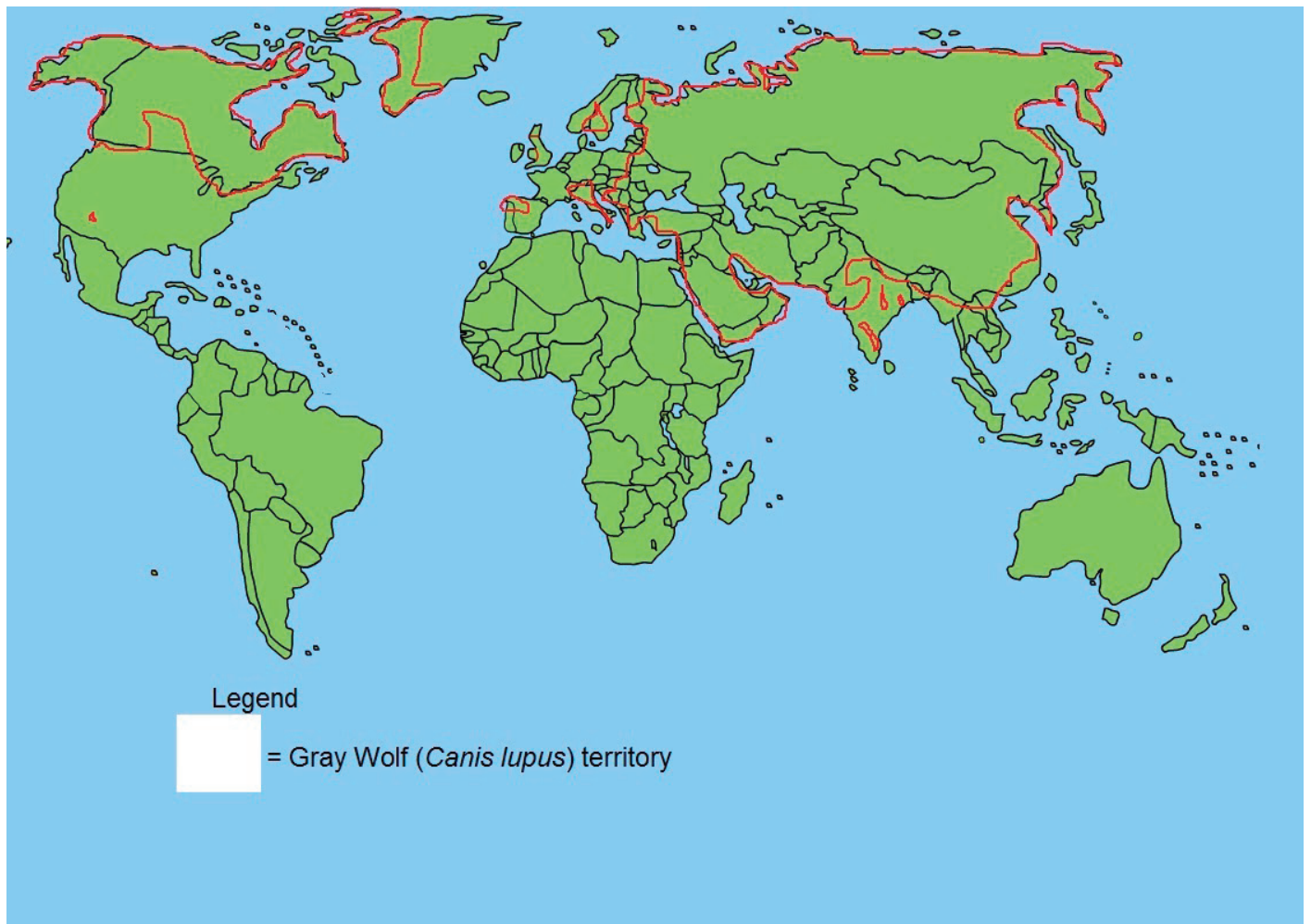


Range Map Worksheet

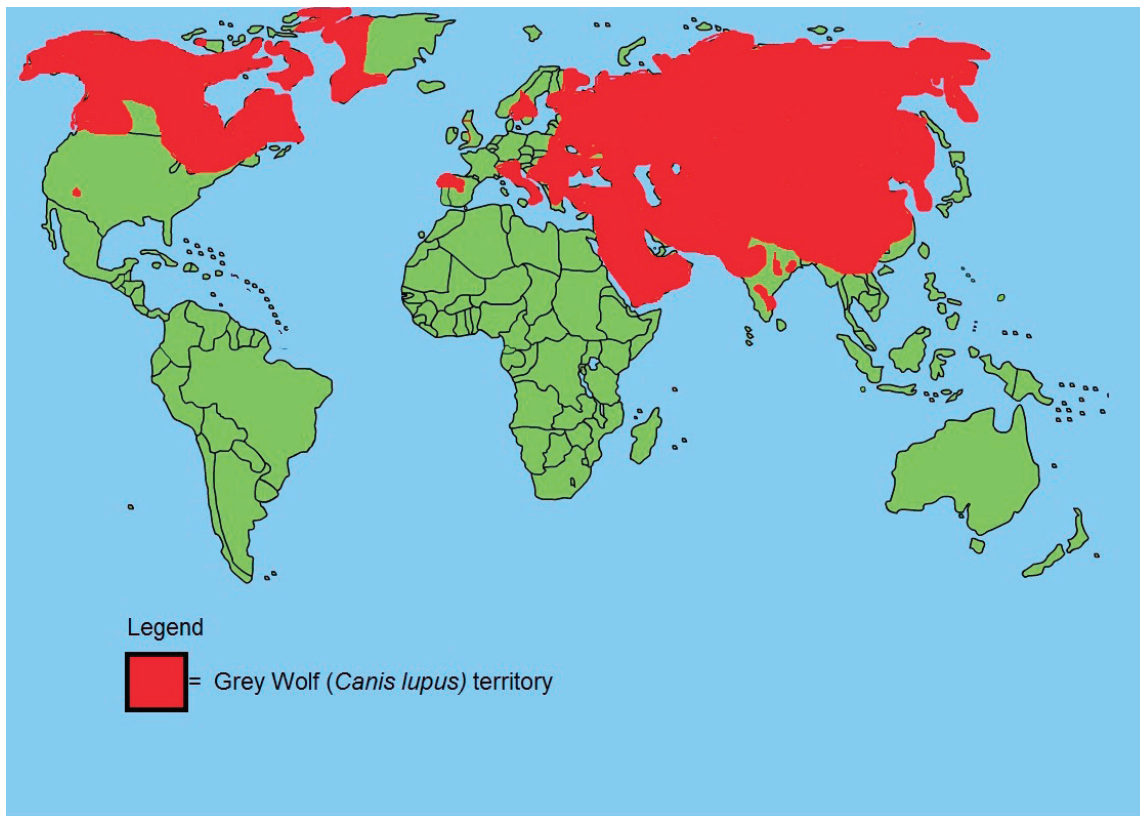
Name: _____

Directions:

Colour the areas on the map outlined in red. These areas show where Gray Wolves live in the wild. You can use a solid colour or a pattern. Use the same colour or draw the same pattern in the white box to make a legend at the bottom of the map.



Example of a correct answer to the range map activity.



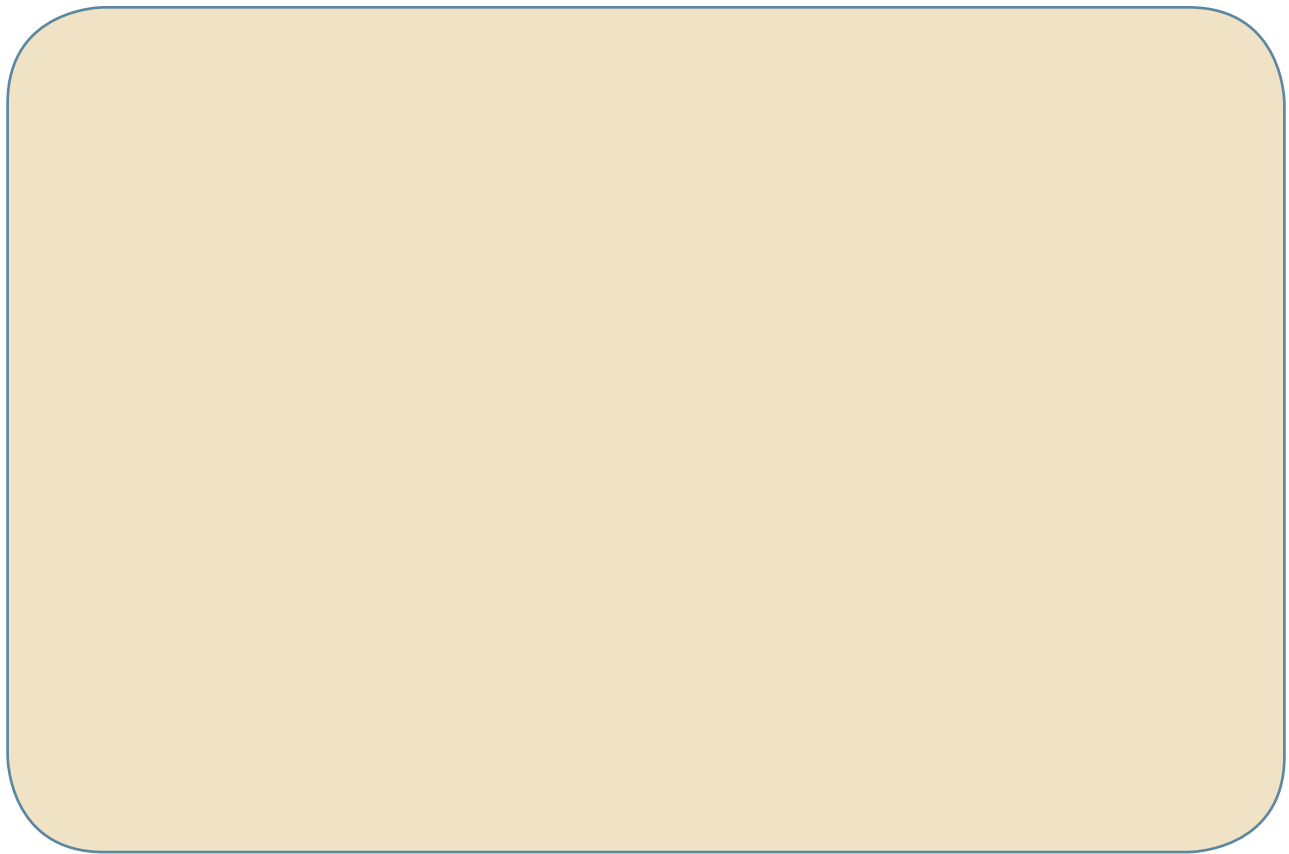
Crest Quest

Name: _____

For many First Nations groups on the Northwest Coast, crests are important symbols that tell a person's family history and stories about their ancestors' interactions with animals (like Wolf) and supernatural worlds.

Directions:

Draw your own crest. Think about animals, symbols and events that are important to you and include them in your drawing. Show your picture to a classmate and see if they can interpret your crest.



Know, Wonder Learn Organizer

Name: _____

Under the “Know” column, write down any facts or information that you know about wolves. Under the “Wonder” column write down any questions you have about wolves. Complete the “Learn” column after your fieldtrip.

Know	Wonder	Learn

Teacher Resources

Recommended links:

Wolf Sites

International Wolf Centre

<http://www.wolf.org/wolves/index.asp>

Northern Lights Wildlife

<http://www.northernlightswildlife.com/index.html>

Wolf Country

<http://www.wolfcountry.net/>

Stories, fables and poems featuring wolves

<http://www.wolfcountry.net/stories/>

Wolf Videos

<http://www.wolfcountry.net/video.html>

National Geographic Videos

Wolf Hunting Techniques

http://video.nationalgeographic.com/video/animals/mammals-animals/dogs-wolves-and-foxes/wolves_gray_hunting/

Grizzlies and Wolves Compete

http://video.nationalgeographic.com/video/animals/mammals-animals/bears-and-pandas/bear_grizzly_wolves/

Live Wolf Presentations

Based on your school policies and liability, you may wish to bring a wolf to your classroom or school.

Northern Lights Wildlife

<http://www.northernlightswildlife.com/education.html>

Who Speaks for Wolf

<http://www.whospeaksforwolf.com/>

Books:

The True Story of the Three Little Pigs, Jon Scieszka. Puffin Books. 1996.

- The wolf gives his own version of what really happened when he tangled with the three little pigs. Suitable for K and up.

The Three Little Wolves and the Big Bad Pig, Eugene Trivizas. Margaret K. McElderry Books. 1997.

- When it comes time for the three little wolves to go out into the world and build themselves a house, their mother warns them to beware of the big bad pig, who has more up his sleeve than huffing and puffing. Suitable for K and up.

The Sea Wolves: Living Wild in the Great Bear Rainforest, Ian McAllister and Nicholas Read.

Orca Books. 2010

- Wonderful photographs and engaging text tell the story of the coastal wolf, a genetically distinct strain of wolf that swims and fishes and inhabits the Great Bear Rainforest on BC's rugged west coast. (Also issued in electronic format). Suitable for grade 2 and up.

References:

Hatler, David F., Nargosen, David W., Beal, Alison M. 2008. *Carnivores of British Columbia*. Victoria: Royal BC Museum.

MacNair, Peter L., Hoover Alan L., Neary, Kevin. 1984. *The Legacy: Tradition and Innovation in Northwest Coast Indian Art*. Victoria: Royal BC Museum.

Stewart, Hilary. 1993. *Looking at Totem Poles*. Vancouver/Toronto: Douglas McIntyre.