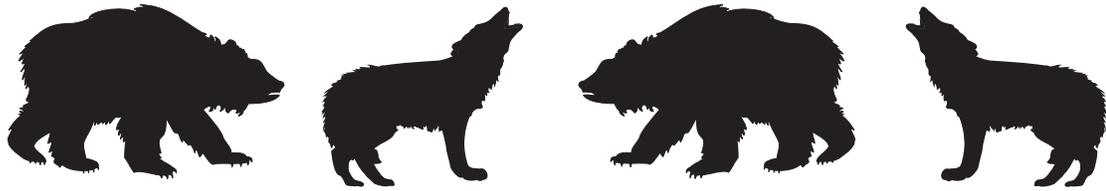


**GRIZZLY BEARS**  
**and WOLVES**  
**IN**  
**NORTH AMERICA**



**WENATCHEE NATIONAL FOREST**





Dear Parents,

Over the next two weeks, our class will be studying grizzly bears and/or wolves. They are both listed as endangered species in the lower 48 states.

In this unit we are presenting the students with the facts about bears and/or wolves - two of the most fascinating mammals in North America. Our aim is to give the students all the information we can and then let them come to their own conclusions about the rights of these two species to exist peacefully in the world we all share.

We encourage you to discuss this lesson with your child, check out books on bears and/or wolves from the library and be willing to carefully look at the materials your child is working on.

In this time of increasing environmental awareness, our goal is to teach the students to look at all sides of an environmental concern. They will learn to weigh the issues fairly, and come to understand all the responsibilities involved in protecting our world for future generations.

You are welcome to join us in our classroom to help us learn about bears and/or wolves. If you have any bear or wolf related items that you would like to share, please call your child's teacher and let him/her know what you have available.

Sincerely,

# GRIZZLY BEARS AND WOLVES IN NORTH AMERICA

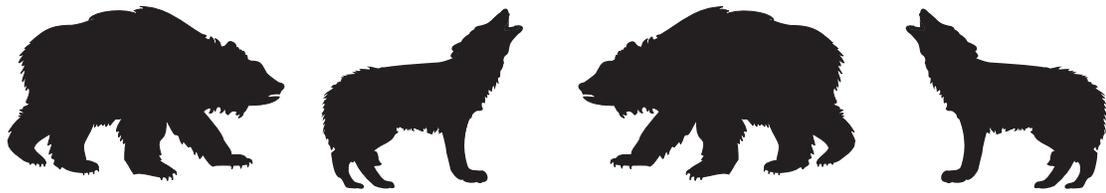
The authors' aim is to teach children, parents, and teachers about the grizzly bear and the wolf. By presenting interesting facts concerning these two species, we hope to increase understanding of the grizzly and the wolf and their roles in our environment.

This packet is geared for 4th through 6th grade students, but can be adapted for other grade levels. It includes activities in all curriculum areas, but music. We encourage teachers to utilize other resources in the use of this packet, e.g. museum displays, songs, movies, books, and guest speakers. This material has been tested in classrooms and resulted in an exciting learning experience for teachers, students, and parents.

The U.S. Forest Service, U.S. Fish and Wildlife Service and the Washington State Department of Game are good sources to contact for guest speakers and displays. The U.S. Forest Service has a wolf and bear box which can be checked out at the Leavenworth Ranger District by contacting the Education Coordinator at 509-782-1413. Northwest Trek near Eatonville, WA and Wolf Haven (360-264-4695) may also be contacted regarding guest speakers, displays, and tours.

**We hope you enjoy teaching these units!**





## To The Teachers:

We hope you enjoy using this packet. We have tried to make it as comprehensive as possible. We encourage you to do outside reading of the books listed in the bibliography, so you can bring special knowledge to your students. You will no doubt find the subject fascinating, as we did. We encourage you to check your school and municipal libraries for resources on wolves and bears that are not listed here.

There are several different ways you can use this packet:

1. Set aside 1 or 2 weeks and spend all day everyday immersed in bears and/or wolves.
  - a. We have included lessons and activities from all subject areas.
2. Teach your morning subjects on your normal schedule, and reserve afternoons to "howl and growl" with wolves and/or bears. This unit will take a little bit longer to complete on this schedule.
3. Use this unit in place of your regular science and social studies curriculum - trying to spend at least 30 minutes a day on the unit and assigning homework.
4. A wolf and bear box can be checked out from the U.S. Forest Service at the Leavenworth Ranger District. Please contact the Education Coordinator at 509-782-1413.

NAME: \_\_\_\_\_

# GRIZZLY BEARS

## STUDENT WORKBOOK







# DO YOU KNOW THE FACTS?

**Directions:** Write five statements about bears.

**#1 ITEMS TO PROVE:**

Example: *Grizzly bear have their young in the fall.*

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

**Directions:** Look in reference books and other resources to find information that will prove or disprove your statement. Write the title of each reference used.

**#2 RESOURCES USED:** Example: *Bear book*

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

**Directions:** Write the correct and factual statements in complete sentences.

**#3 THE REAL TRUTH:**

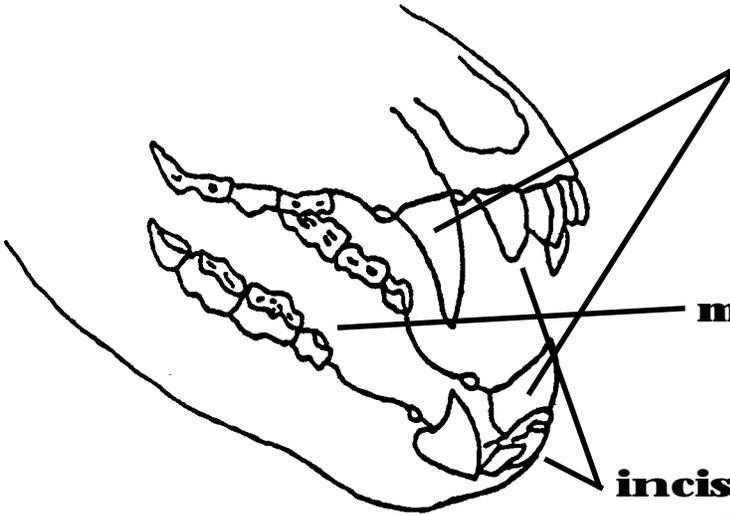
Example: *Grizzly bears usually give birth to their cubs in February.*

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_



# jaws

## GRIZZLY JAW STRUCTURE AND TEETH



**canine** (kay-nine)

Used for catching and killing prey. Also used for ripping meat from carcass.

**molars** (mow-lers)

Used for smashing and grinding plant food.

**incisors** (in-size-ors)

Used for catching and killing prey. Also used for ripping meat from carcass.

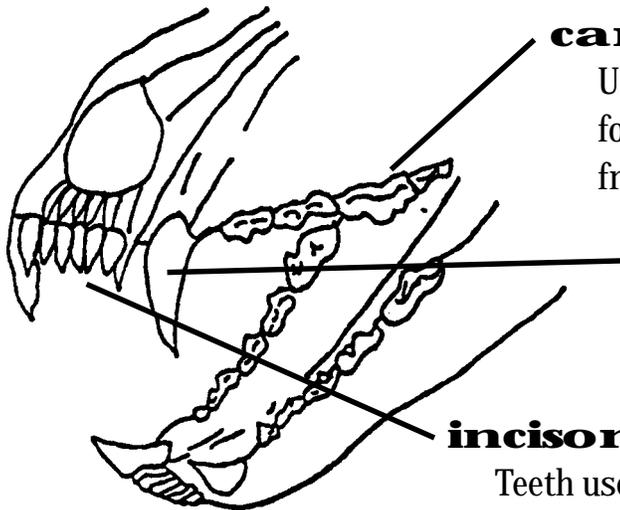
**How are your teeth and the grizzly's teeth alike? How are they different?**

**Find a picture of a wolf or dog skeleton and a bear skeleton.**

**Find three differences and three similarities.**

**How are your teeth the same or different from wolves and bears?**

## WOLF JAW STRUCTURE AND TEETH



**carnassial** (kar-nas-ee-al)

Used for chewing into smaller pieces for swallowing. How are these different from the bear's molars?

**canine** (kay-nine)

Teeth used to grab and hold onto prey.

**incisors** (in-size-ors)

Teeth used to pick meat off bones. Where are your incisors? What do you use them for?



# DIFFERENCE BETWEEN GRIZZLY BEAR AND BLACK BEAR TRACKS

## NOTES TO CONSIDER:

-  Less arc in toes compared to the black bear.
-  Toes are closer together compared to the black bear.
-  Grizzly bears have longer claws compared to the black bear.
-  Draw a line from the lowest point of the outside toe (1), through the highest point on the front edge of the bear foot pad (2), and to the inside toe (3). If it is a grizzly bear the inside toe will be above the line. If it is a black bear the inside toe print will be below the line.



**GRIZZLY  
TRACK**

left front



**BLACK BEAR  
TRACK**

left front



# **GRIZZLY Track**

(Hind Foot,  
Slightly Smaller  
than Actual Size)  
**Is your foot bigger?**



# BEAR TRACKS

## BLACK BEAR

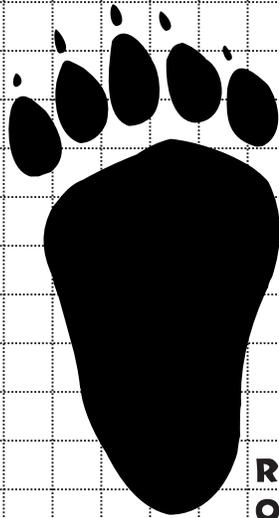


**REAR  
OR HIND**

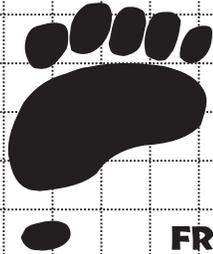


**FRONT**

## GRIZZLY BEAR

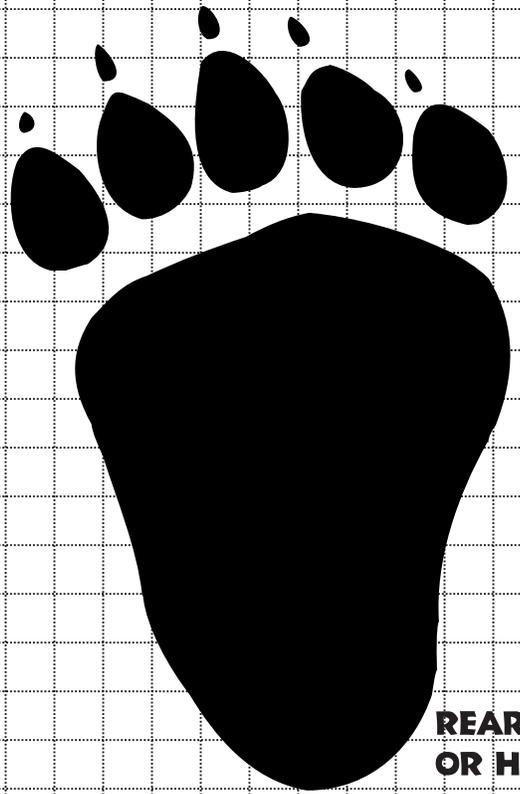


**REAR  
OR HIND**

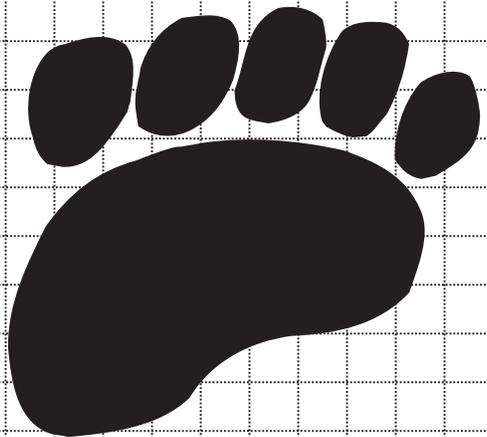


**FRONT**

## ALASKA BROWN BEAR



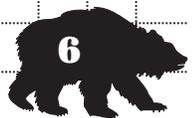
**REAR  
OR HIND**



**FRONT**

<b>Black Bear Front.....</b>	_____	inches
<b>Black Bear Rear.....</b>	_____	inches
<b>Grizzly Bear Front.....</b>	_____	inches
<b>Grizzly Bear Rear.....</b>	_____	inches
<b>Alaska Brown Bear Front</b>	_____	inches
<b>Alaska Brown Bear Rear</b>	_____	inches

**EACH LINE REPRESENTS ONE INCH**



# THE BEAR TRACK FACTS

-  Bears appear “pigeon-toed” when walking.
-  In a real bear track, the heel pad of the front foot usually doesn't show.
-  A human's little toe is on the outside of the foot.  
A bear's smallest toes are on the inside of the foot.

## Things to remember when looking at bear tracks

-  A grizzly front track will show claw marks farther from the pad prints than a black bear.
-  Grizzly toe pad prints sometimes appear like they are touching each other.
-  A young grizzly track may look like the black bears track.
-  Tracks may appear larger than they really are due to the type of soil or snow and the age of the track.

## Questions:

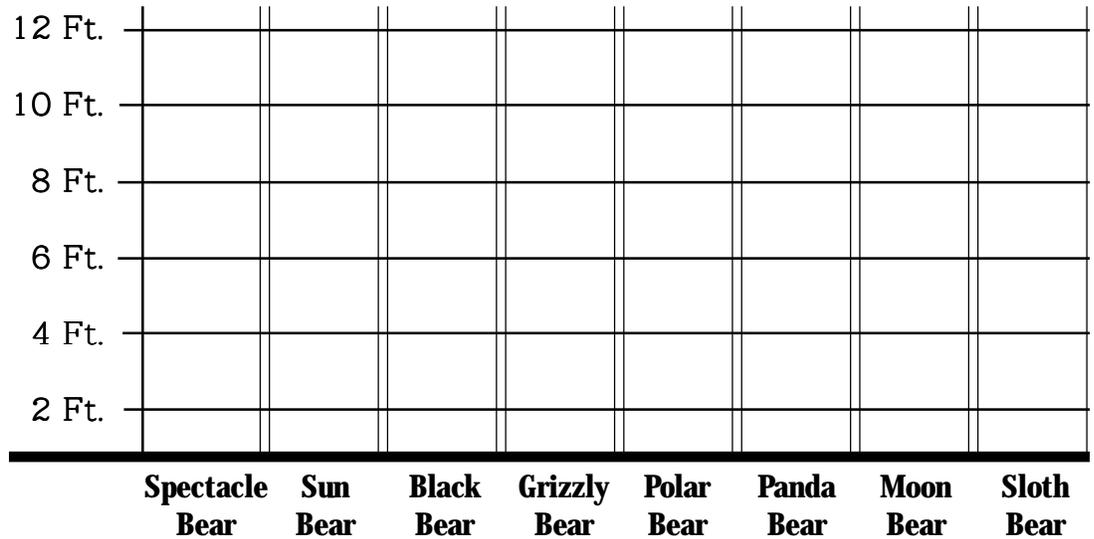
-  What is the difference in the front foot track length of the grizzly bear and the black bear? Between a grizzly and the Alaska brown bear?  
\_\_\_\_\_
-  Measure the length of your bare foot print. \_\_\_\_\_
-  What is the difference between your foot print and a black bear?  
\_\_\_\_\_
-  What is the size difference between your foot print and a grizzly?  
\_\_\_\_\_
-  Compare the width of a grizzly and a black bear front foot.  
\_\_\_\_\_
-  Compare the width of your foot and a grizzly's rear foot.  
\_\_\_\_\_



# HOW DOES THE GRIZZLY MEASURE UP?

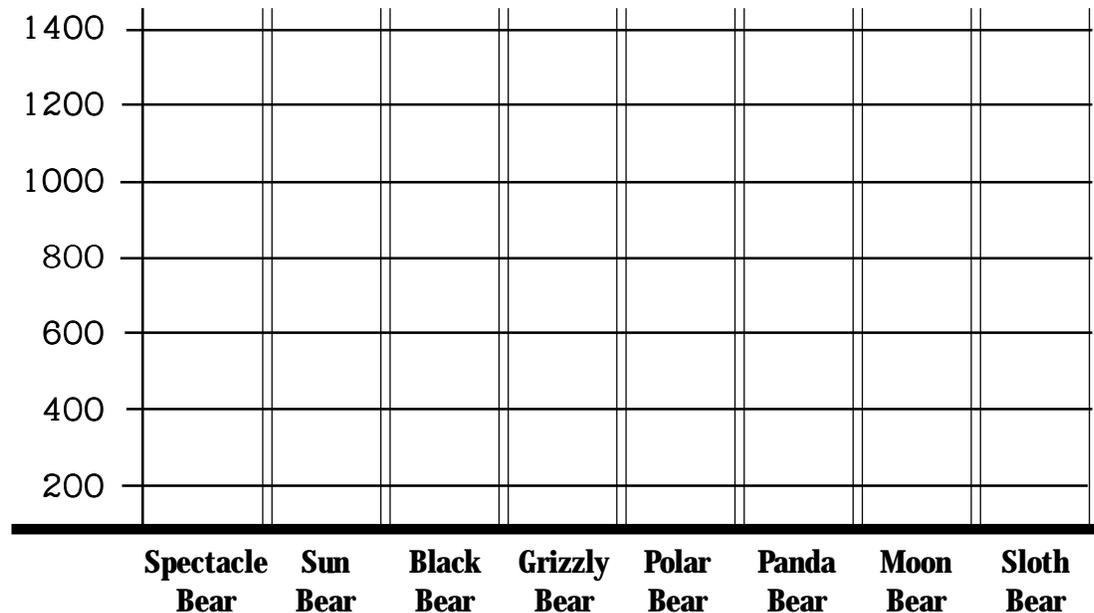
## DIRECTIONS:

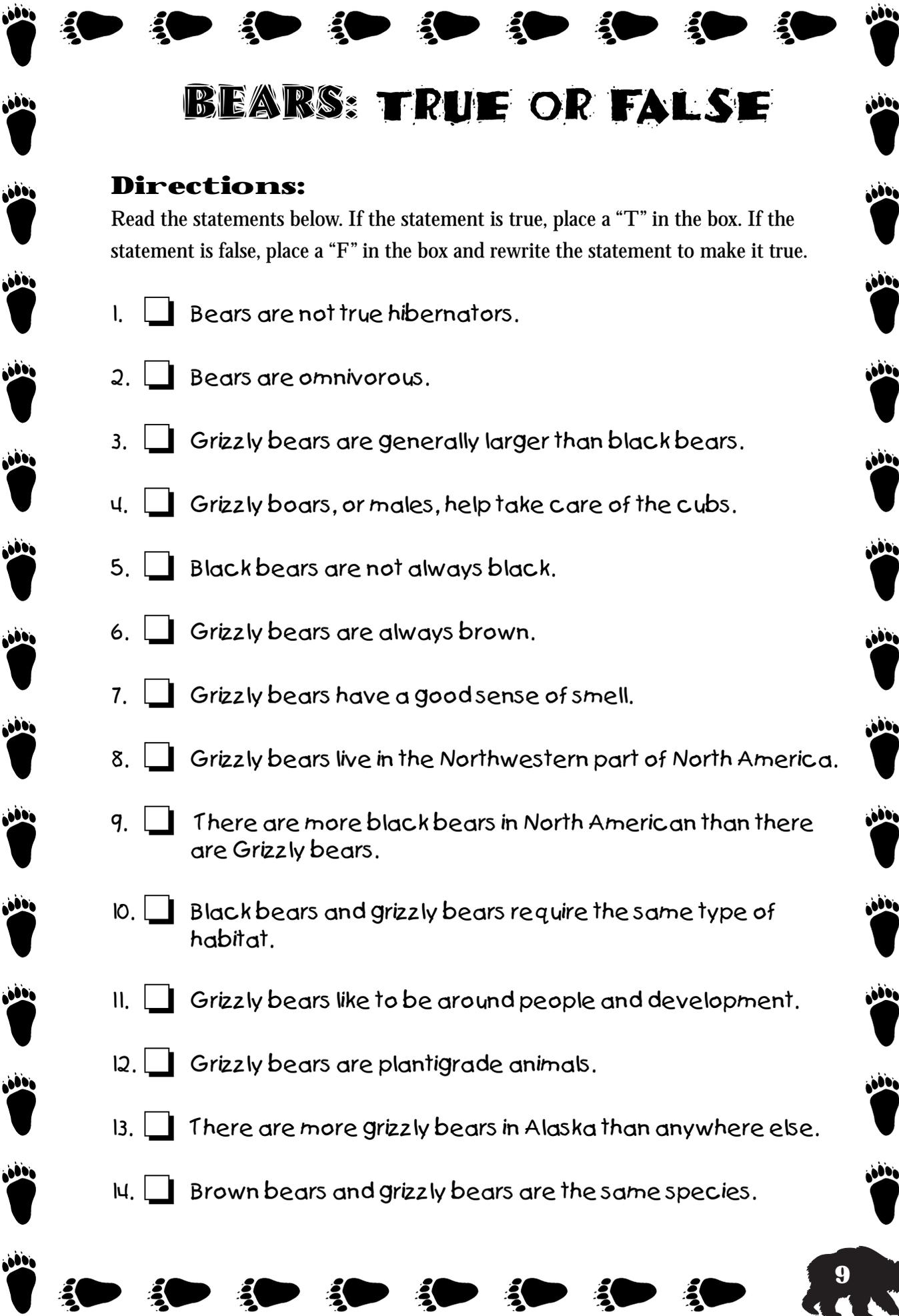
Use the resources available to locate the length of the eight bear species. Place their measurement on the graph.



## DIRECTIONS:

Find the weight of the eight bear species and graph them accordingly.





# BEARS: TRUE OR FALSE

## Directions:

Read the statements below. If the statement is true, place a "T" in the box. If the statement is false, place a "F" in the box and rewrite the statement to make it true.

1.  Bears are not true hibernators.
2.  Bears are omnivorous.
3.  Grizzly bears are generally larger than black bears.
4.  Grizzly boars, or males, help take care of the cubs.
5.  Black bears are not always black.
6.  Grizzly bears are always brown.
7.  Grizzly bears have a good sense of smell.
8.  Grizzly bears live in the Northwestern part of North America.
9.  There are more black bears in North America than there are Grizzly bears.
10.  Black bears and grizzly bears require the same type of habitat.
11.  Grizzly bears like to be around people and development.
12.  Grizzly bears are plantigrade animals.
13.  There are more grizzly bears in Alaska than anywhere else.
14.  Brown bears and grizzly bears are the same species.

# BEAR COMMUNICATION

Like wolves, bears use both vocalization and body language to communicate with other members of their species. Humans should be aware of the way bears communicate, as this awareness could prevent an attack.

## **STANDING ON HIND LEGS:**

The bear is curious, and is trying to get a better idea of what is in front of him. This is not normally an aggressive posture.

## **STANDING ON ALL FOURS:**

-  Turned sideways — signaling "I don't want to fight."
-  Lowering of head — a threat to another creature to back off.
-  Hair rising on back of neck — a sign he is warning the creature disturbing him.
-  Ears pinned back against head, flattened to the neck — sign of increasing aggressiveness.
-  Voice — whuffs or snorts— a strong warning of possible attack.
-  Voice — growls, jaw popping, teeth clicking — attack is **IMMINENT**.

## **Grizzlies kill fewer people than do lightning, bee stings, or snake bites.**

When in grizzly country, you are in danger of being attacked **IF** you do any of the following:

-  Try to get too close to a bear to photograph it
-  Get too close to a mother bear and cubs
-  Surprise a bear near his food cache
-  Surprise a female with cubs

Aggressive behavior is used by bears to:

-  Protect themselves and their cubs
-  Obtain or defend a food source
-  Repel other bears during breeding season to establish dominance

 **When grizzlies fight with each other, fights rarely end in death or serious injury. One bear will signal defeat and leave the scene.**

**BONUS:** Find out what a habituated bear is. Why should it be more dangerous for people to hike in areas that are populated with habituated bears?



# BEAR LANGUAGE

## DIRECTIONS:

Check off each direction as you complete it.

1. Look up the word "bear" in your dictionary

2. In the blanks below, write three different definitions of "bear" used as a noun (n).

bear (n) 1. \_\_\_\_\_

bear (n) 2. \_\_\_\_\_

bear (n) 3. \_\_\_\_\_

3. On the lines below, use each "bear" (n) in an original sentence that indicates the meaning of each word.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. Now look for three different meanings of the word "bear" used as a verb (v). On each of the blanks below write a definition of "bear" used as a verb (v).

bear (v) 1. \_\_\_\_\_

bear (v) 2. \_\_\_\_\_

bear (v) 3. \_\_\_\_\_

5. On the lines below, use each "bear" (v) in an original sentence that indicates the meaning of each word.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

6. Place a check if you proof read your sentences to make sure each sentence begins with a capital, has words spelled correctly, and has a period at the end of the sentence.



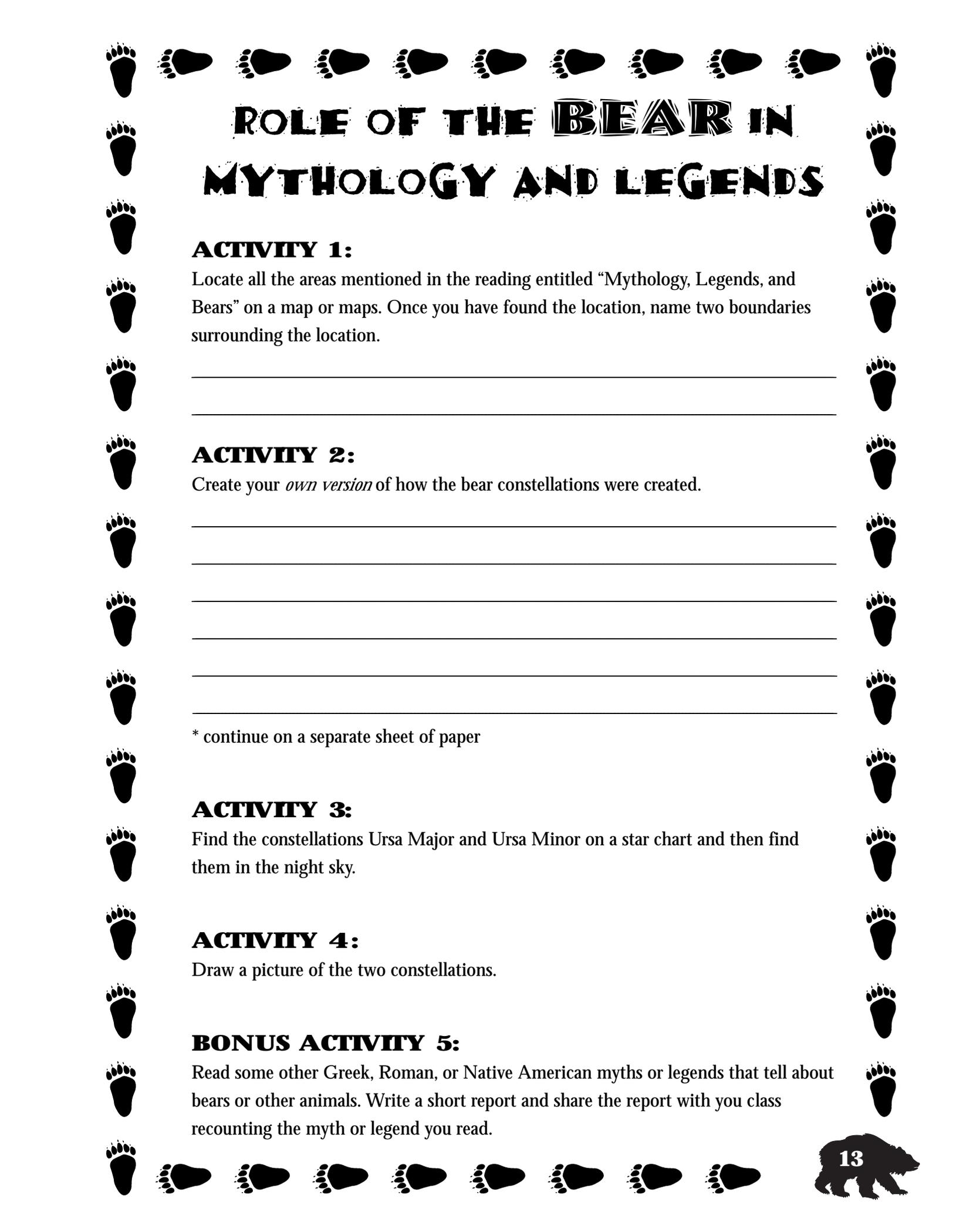
# INTERESTING BEAR FACTS

## **HYPERPHAGIA...**

is a time when bears eat a lot to get enough fat for denning. A big grizzly can eat up to 36,000 calories a day. A Big Mac is 550 calories. How many Big Macs would a bear have to eat in one day to get enough calories? \_\_\_\_\_

The bear will also urinate up to four gallons a day to get rid of as much waste product as possible before entering the den. Experiment: Fill a gallon container (plastic milk jug) with water 4 times and empty into a large sink to see how much fluid this is!





# ROLE OF THE BEAR IN MYTHOLOGY AND LEGENDS

## ACTIVITY 1:

Locate all the areas mentioned in the reading entitled “Mythology, Legends, and Bears” on a map or maps. Once you have found the location, name two boundaries surrounding the location.

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## ACTIVITY 2:

Create your *own version* of how the bear constellations were created.

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---

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\* continue on a separate sheet of paper

## ACTIVITY 3:

Find the constellations Ursa Major and Ursa Minor on a star chart and then find them in the night sky.

## ACTIVITY 4:

Draw a picture of the two constellations.

## BONUS ACTIVITY 5:

Read some other Greek, Roman, or Native American myths or legends that tell about bears or other animals. Write a short report and share the report with you class recounting the myth or legend you read.

# A TALE OF A TEDDY!

**B**ack in 1902 President Theodore Roosevelt was in Mississippi to resolve a boundary dispute between that state and Louisiana. Since the President was an avid hunter, he went on a hunting trip after business was taken care of. He and his hunting party encountered a bear cub, but he refused to shoot it, even though his hunting companions encouraged him to do so.

Newspaper reporters were quick to print a story about the incident... Morris Michton, a New York toymaker, read the article in the newspaper. It gave him an idea for a new toy — a stuffed bear. The prototype sold immediately. He made another bear, then wrote to the president asking for permission to use his nickname, “Teddy,” to sell the bear. The President gave permission to use his name, and a new toy was born! Michton began manufacturing and selling the “Teddy” Bears. They were very popular. Michton’s toy company eventually came to be known as the Ideal Toy Company. Teddy bears remain one of the most popular toys ever invented.

Draw a picture of your favorite Teddy Bear.



Go home and write down all your toys that are manufactured by the Ideal Toy Company.

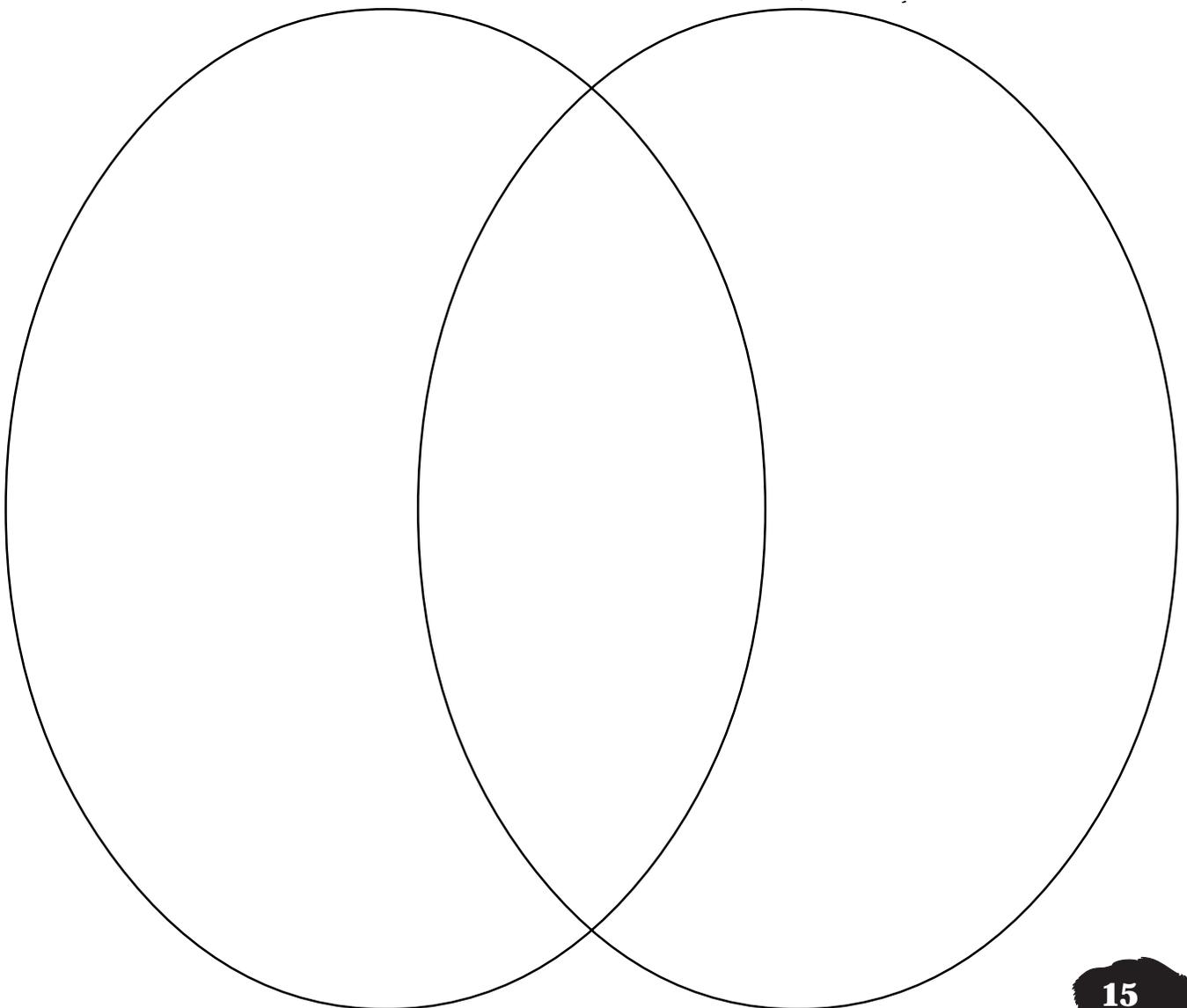


# WHAT ARE OUR SIMILARITIES AND DIFFERENCES ?

Bears and humans have similarities and differences in personality, appearance, and behavior. There are also some similarities and differences between bear family behavior and human family behavior. Write down all the things you know about bear personality, appearance, behavior, and communication. Do the same for humans. In the section where both overlap list the things that are much the same for both bears and humans.

**BEARS**

**HUMANS**







# GRIZZLY



## WORD FIND

### Directions:

Words can be found backwards, up, down, or diagonal.

T H E T H R E A T E N E D L I N G T O W A S H  
 O N W G A T N X E T W R A B E D E E A R L O T  
 W T E N A C D U G R I Z Z L Y I D E E T W A L  
 M E M I B L A C K R A S C A T B A B C E E D Y  
 A L A T I A N R O T G Y U C N H R M O I S G P  
 W A S A H W G J O I L W E K Q U G B U I N N Y  
 B U B N S S E G N A R U S C K S I O S I L O T  
 B O A R N N R L O C H P N O V O T A L P I T E  
 H T E E W V E G H T U C U N W A N R H E L L O  
 F O A B R E D N N Y M B G R O L A G R O W L S  
 O M N I V O R E R E R E P G A L S E L H V I U T Y  
 W O W H A B I T U A T E D X Y X P E L Y P P S

THREATENED

HUMP

HABITUATED

ENDANGERED

CUB

OMNIVORE

GRIZZLY

PLANTIGRADE

BOAR

SCAT

CLAWS

SOW

YEARLING

RANGES

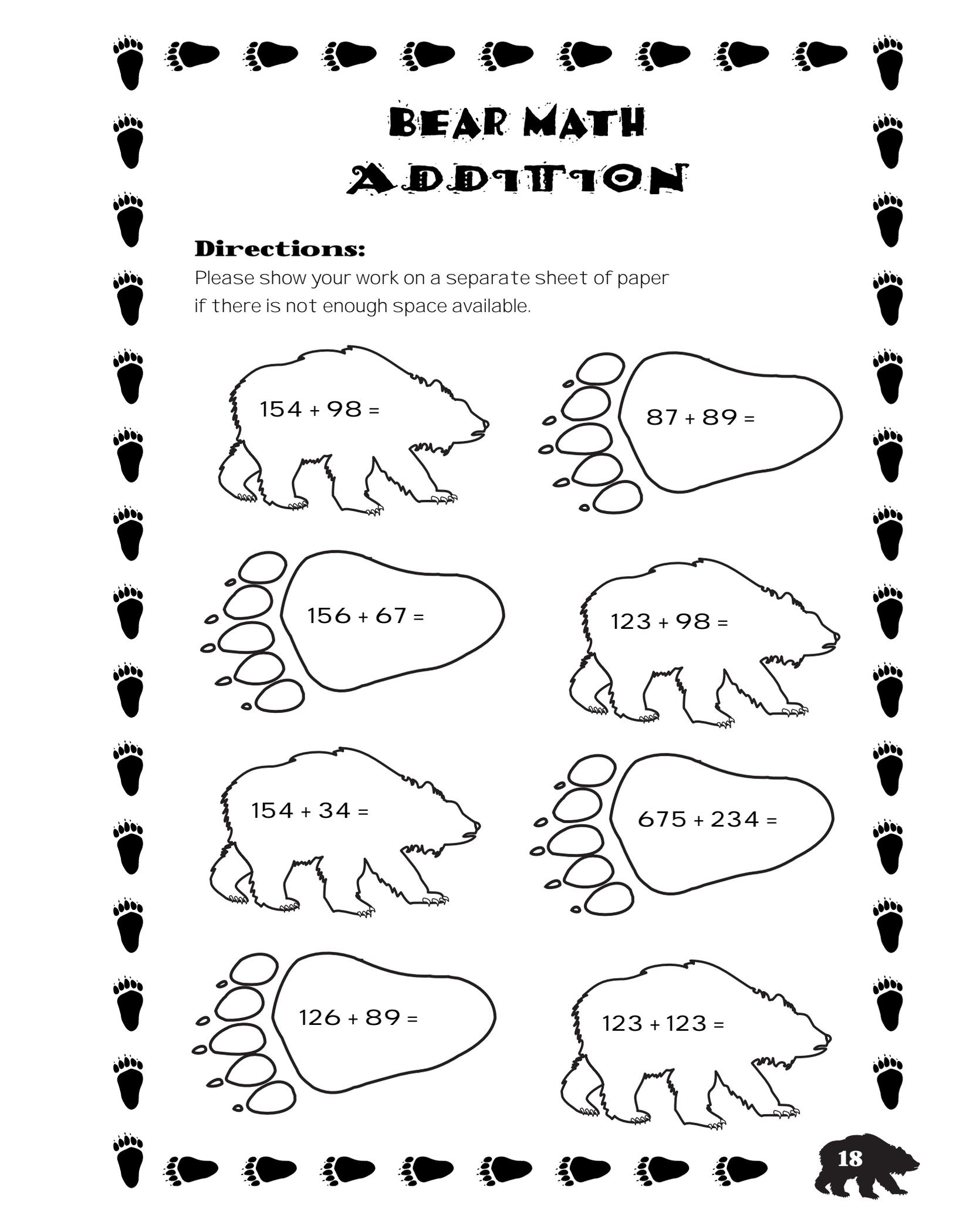
BLACK

HIBERNATING



Extra Credit: Find the definition of each word in your student glossary. Write a sentence using each word.

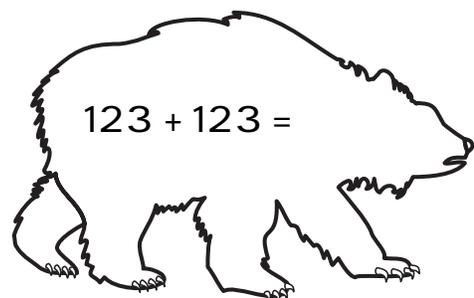
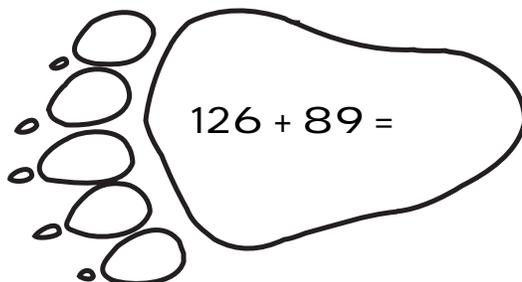
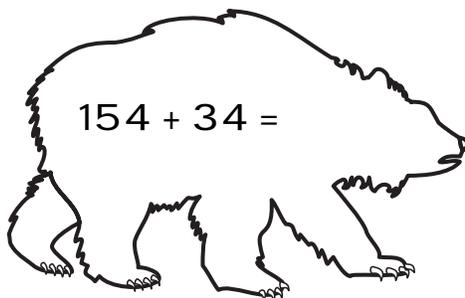
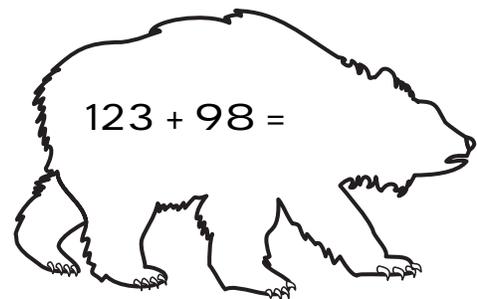
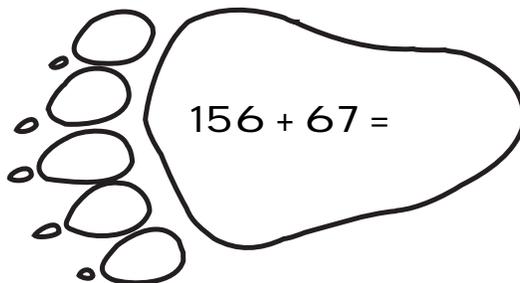
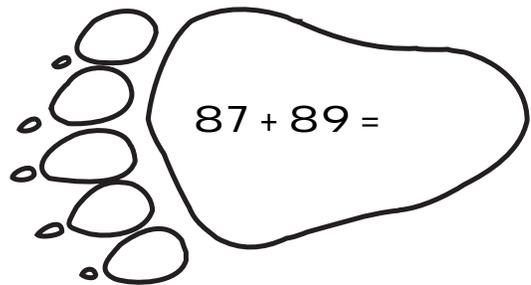
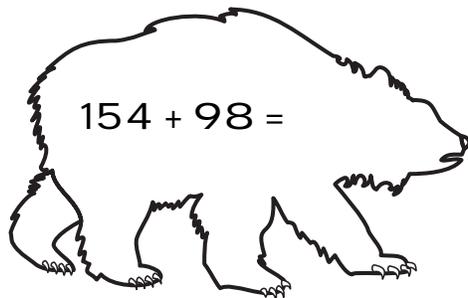




# BEAR MATH ADDITION

## Directions:

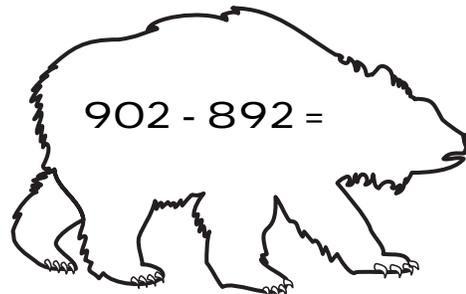
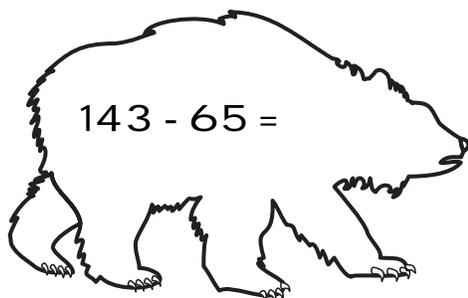
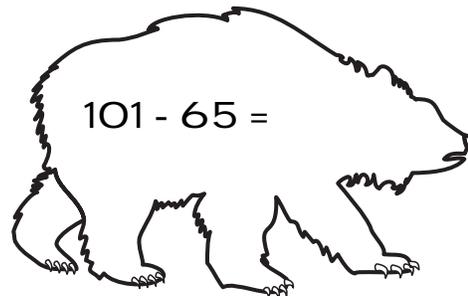
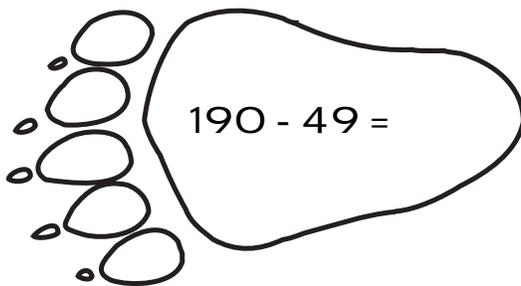
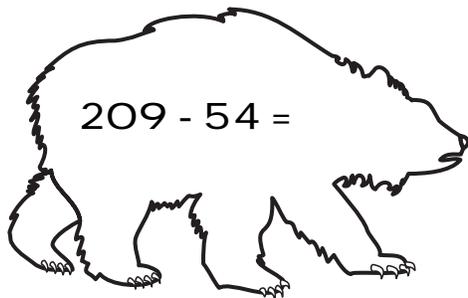
Please show your work on a separate sheet of paper if there is not enough space available.

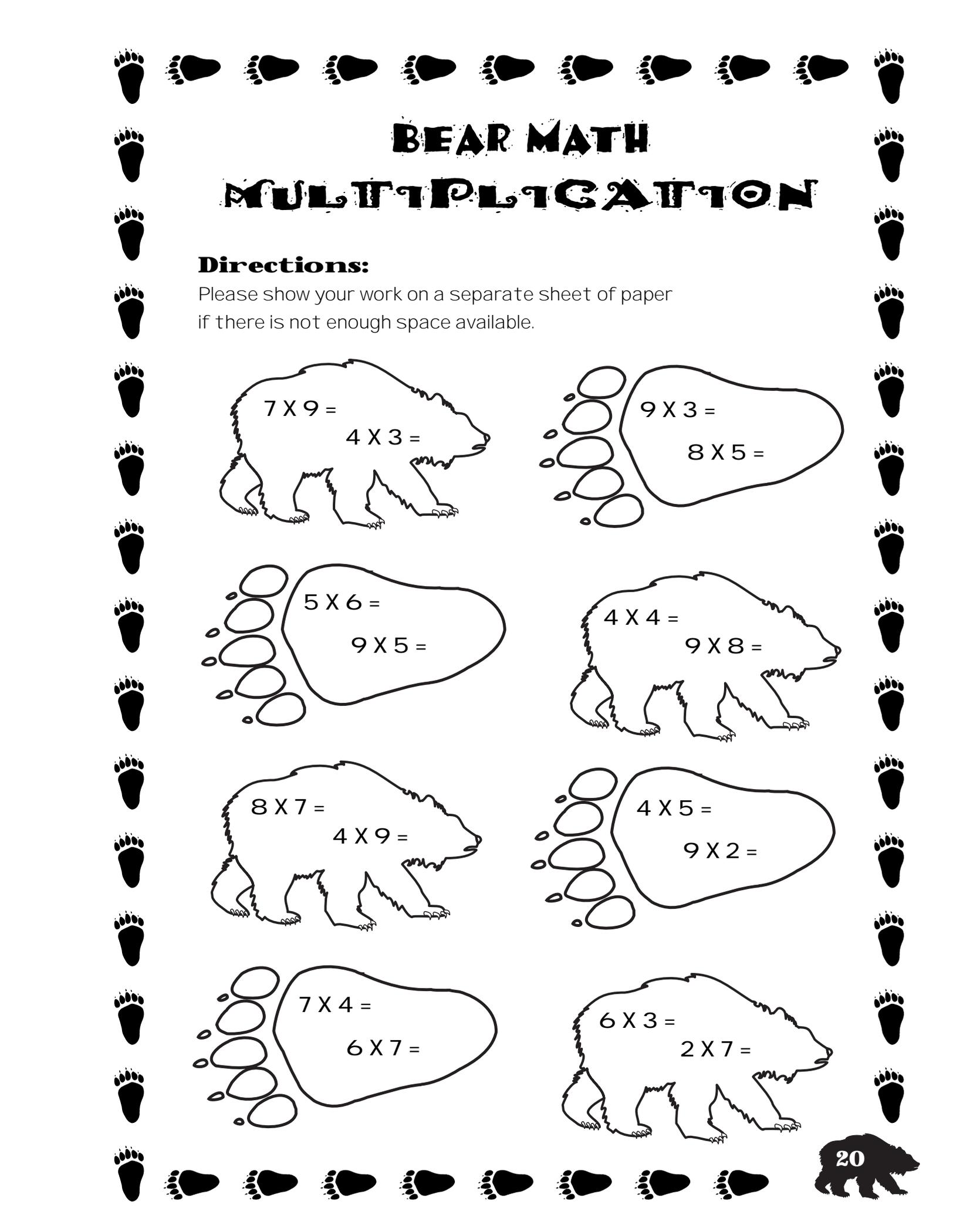


# BEAR MATH SUBTRACTION

## Directions:

Please show your work on a separate sheet of paper if there is not enough space available.

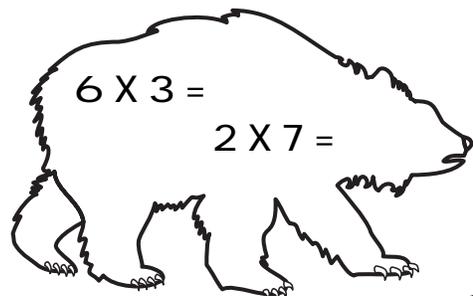
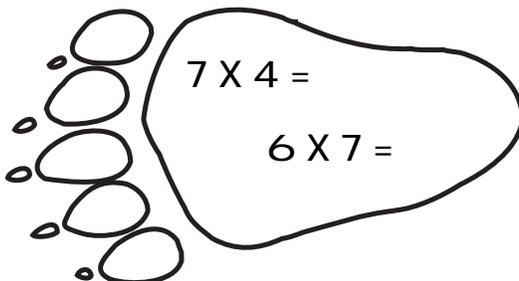
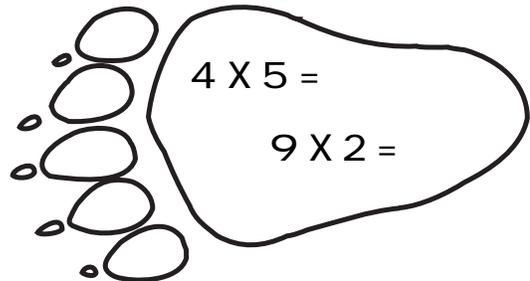
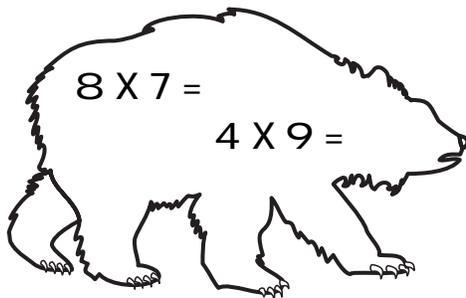
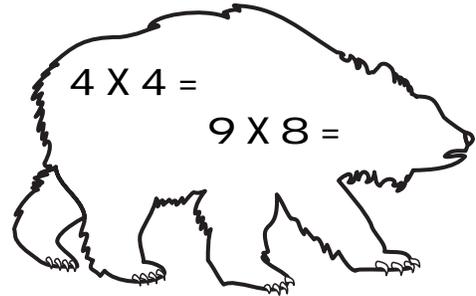
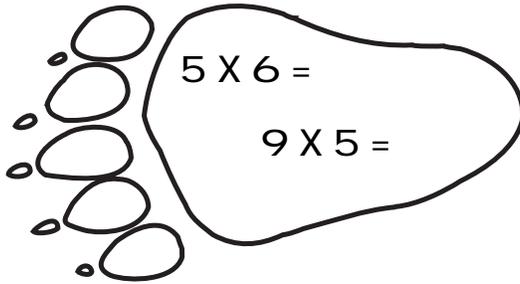
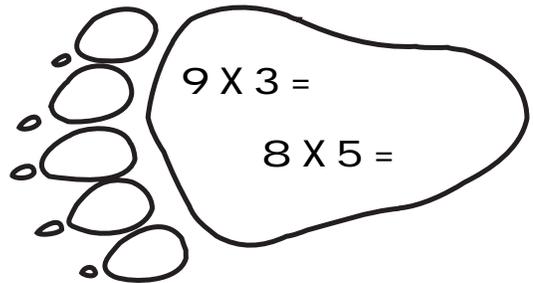
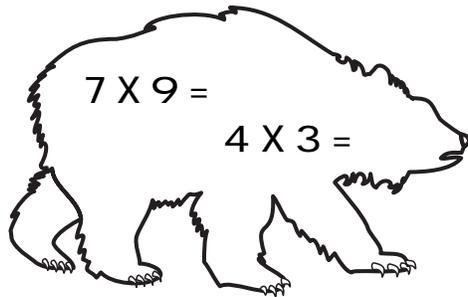




# BEAR MATH MULTIPLICATION

## Directions:

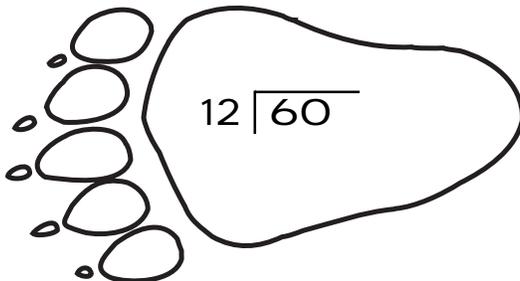
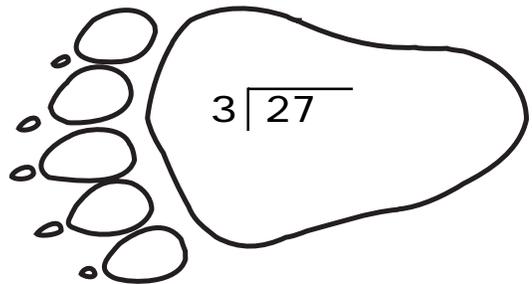
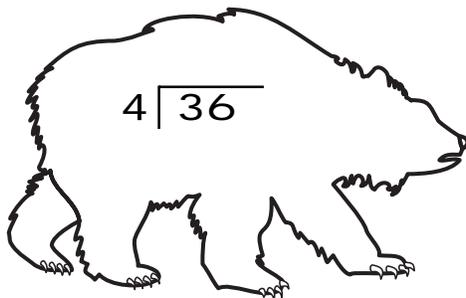
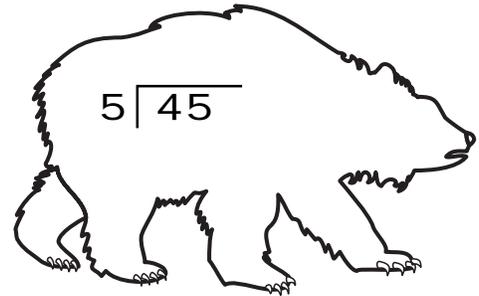
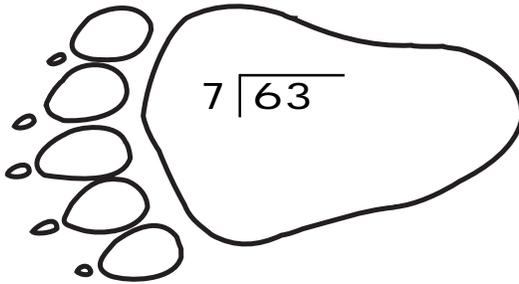
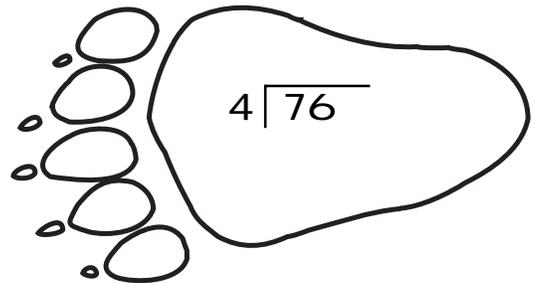
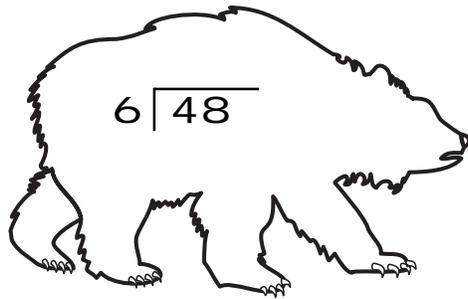
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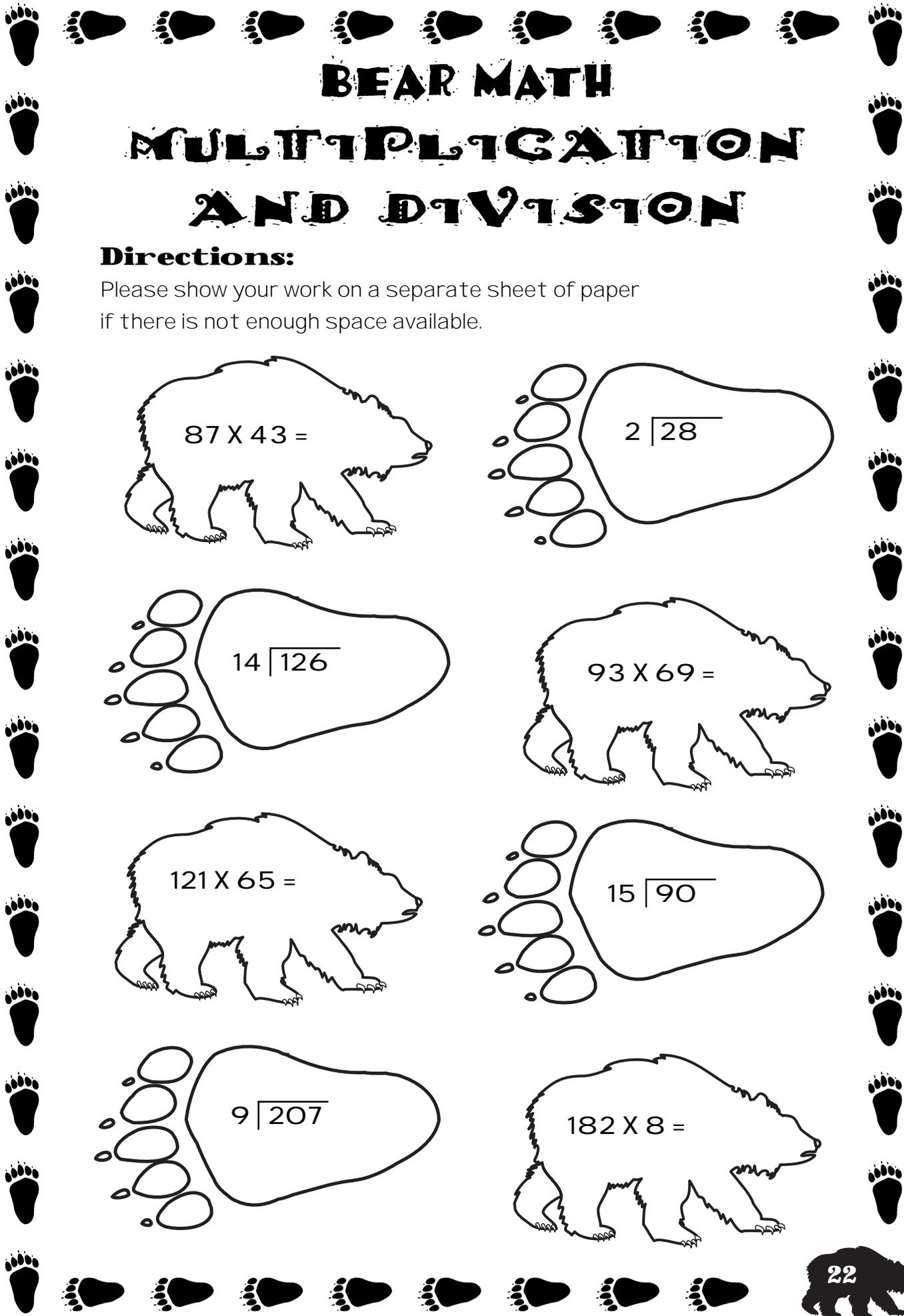


# BEAR MATH DIVISION

## Directions:

Please show your work on a separate sheet of paper if there is not enough space available.





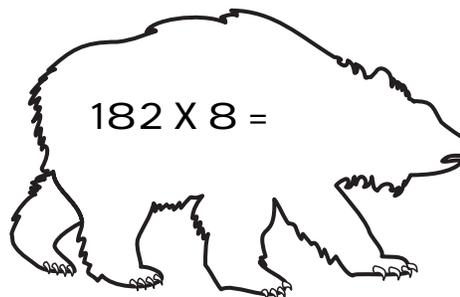
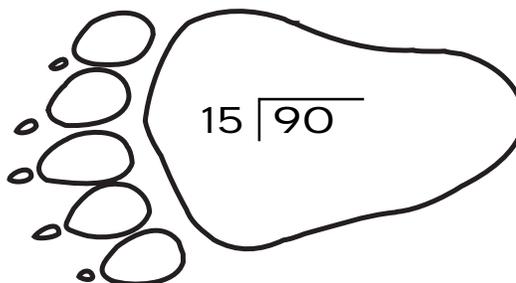
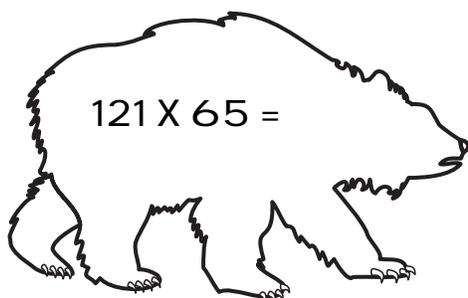
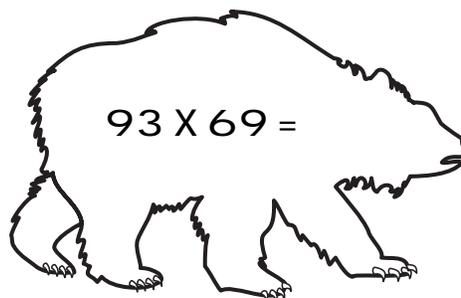
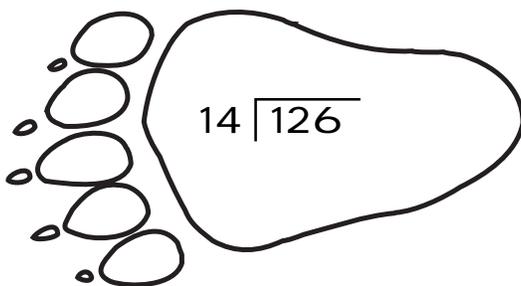
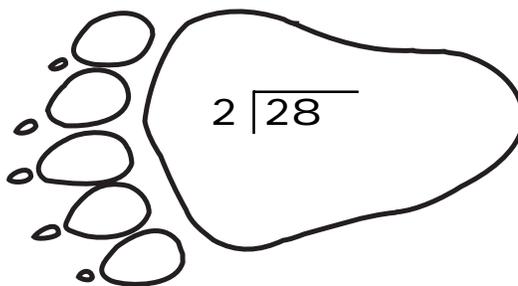
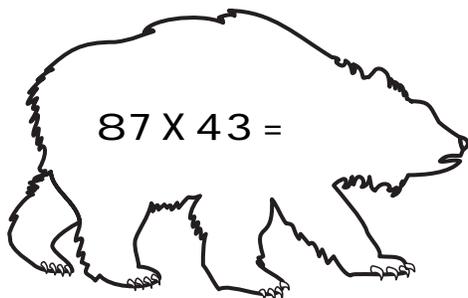
# BEAR MATH

## MULTIPLICATION

## AND DIVISION

### Directions:

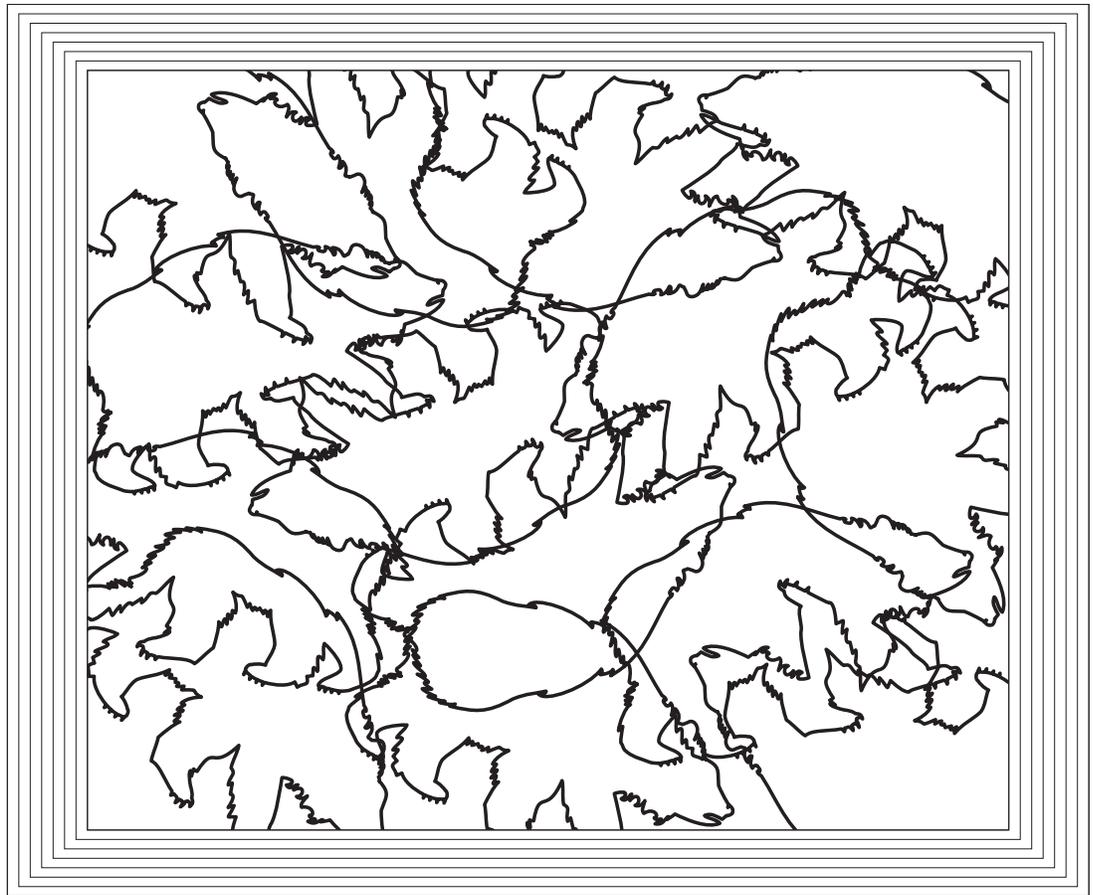
Please show your work on a separate sheet of paper if there is not enough space available.



# HOW MANY GRIZZLIES CAN YOU SEE?

## **DIRECTIONS:**

Count how many completed grizzlies you can spot in this square. Be careful and make sure to count those that overlap.

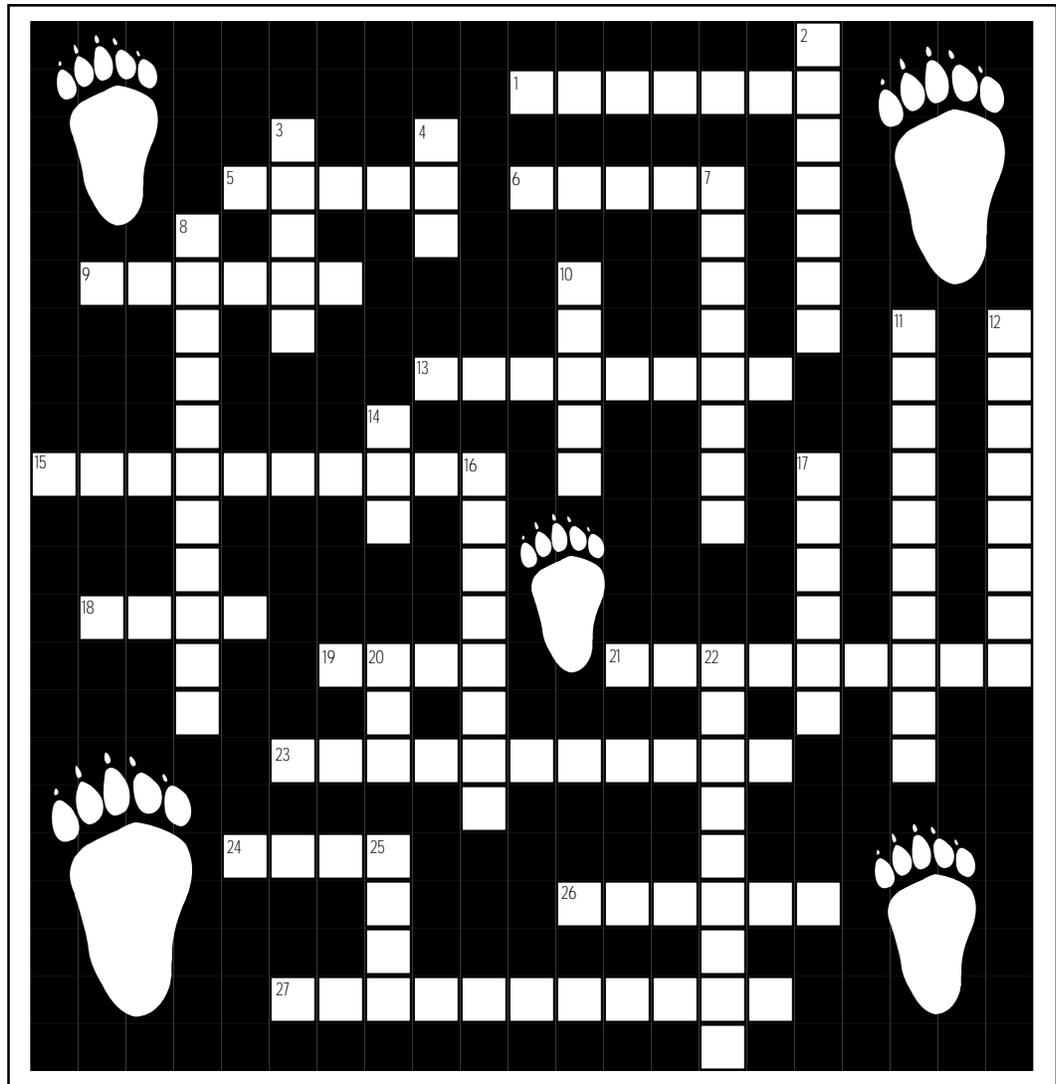


**TOTAL NUMBER OF GRIZZLIES:**

# BEAR CROSSWORD

## word list

glacier  
 cache  
 Teddy  
 pelage  
 subadult  
 omnivorous  
 boar  
 scat  
 scavenger  
 hibernation  
 dish  
 Alaska  
 hyperphagia  
 plantigrade  
 range  
 den  
 sow  
 black  
 yearling  
 grizzly  
 solitary  
 cub  
 hump  
 predator  
 hypophagia  
 day bed  
 agonistic



## DOWN:

2. Another name for a brown bear
3. The area a bear travels
4. The place in which a bear hibernates
7. A bear that is one year old or a little older
8. A word to describe how a grizzly (or human) walks
10. A common American bear, the \_\_\_\_\_ bear
11. The period right after a bear comes out of hibernation, when they still use stored fat for energy, even though they are beginning to eat spring food
12. An animal that kills other animals for food
14. A female adult bear
16. Alone
17. A place where grizzlies sleep during the day
20. A young bear, under a year old
22. Aggressive behavior
25. One distinguishing mark of the grizzly

## ACROSS:

1. A large national park in N.W. Montana where grizzlies be found
5. Partially buried food supply
6. A toy bear named from a former U.S. President
9. An animal's fur coat
13. A young grizzly
15. Name for a creature that eats both plants and animals
18. Name of a male bear
19. Undigested seeds can be found in the bear's \_\_\_\_\_
21. An animal that eats carrion
23. A bear's winter sleep
24. Shape of a grizzly's nose
26. The state with the largest population of grizzlies
27. The period right before hibernation when bears are eating less.

Use your student glossary to help you define any words.





# STUDENT GLOSSARY

**ADAPTATION:** A change in behavior or physical characteristics of a plant or animal that enables it to survive in its environment.

**AGONISTIC:** Aggressive behavior, used by bears and wolves to chase away threatening people or animals.

**ALPHA:** The female leader and male leader of a wolf pack.

**ALPINE:** High level land, characterized by stunted trees, low growing shrubs, and flowers; covered by snow much of the year.

**ARTIC:** The area surrounding the North Pole.

**BETA:** The second most important male or female in a wolf pack; they are submissive only to the alpha wolves.

**BLACK BEAR:** *Ursus americanus*, a bear found over much of North America, smaller than a grizzly, with a longer face and no shoulder hump.

**BOAR:** A male bear

**CACHE:** Buried or partially buried meat stored for eating later. This method is used by bears and wolves.

**CANINE:** Teeth used to grab and hold onto prey.

**CARNASSIAL:** The back teeth of a carnivore used for chewing meat.

**CARNIVORE:** Any meat-eating animal.

**CARNIVOROUS:** Meat eating (adjective)

**CARRION:** The flesh of dead animals

**CLAWS:** The long sharp “toenails” used by grizzlies for digging.

**CUB:** A young bear



**DAYBED:** A protected bed where a bear rests when it is not traveling, feeding, or hibernating.

**DELAYED IMPLANTATION:** The mechanism by which a fertilized egg does not attach to the uterine wall until the bear's hibernation.

**DEN:** 1. Where the bear hibernates. 2. A secure dug out room in which a female wolf gives birth to her pups; also the place where the pups spend the first few weeks of their lives.

**DIGITIGRADE:** The manner in which an animal walks on just the toes of his feet, like dogs and wolves do.

**DISH FACE:** One of the distinguishing characteristics of a grizzly; a concave dip in the nose.

**ECOSYSTEM:** A community of living organisms interacting with their environment and each other to form a unified whole.

**ENDANGERED:** Population of a species is so low that extinction is possible.

**EXTINCT:** No longer existing.

**GESTATION:** The period of pregnancy between mating and birth.

**GRIZZLY:** *Ursos arctos*, a large brown bear of North America.

**HABITAT:** The environment in which an animal lives.

**HABITUATION:** Becoming accustomed to human presence; losing fear of humans.

**HERBIVORE:** An animal who only eats plants.

**HIBERNATION:** A state of lowered metabolism in wintertime, during which a bear rests in his den, neither eating nor urinating or defecating.

**HUMP:** A large mass of muscle above the grizzly's shoulders, characteristic of the grizzly.

**HYPERPHAGIA:** Metabolic change leading to hibernation; eating less, lethargic.

**HYPOPHAGIA:** The period right after a bear comes out of hibernation; eating sparingly, still metabolizing body fat for energy.

**INCISOR:** The front teeth used for catching and killing prey.



**ISOLATION:** Being alone, not being bothered by human presence; one of the seven requirements of grizzlies.

**LITTER:** A group of wolf pups, the average litter size is six pups.

**LUPUS:** The scientific name for wolf (*canis lupus*).

**MOLAR:** The back teeth used for smashing and grinding food.

**OMEGA:** Lowest ranking wolf in the pack.

**OMNIVORE:** Any animal that eats both animal and plant foods.

**PACK:** A group of wolves who live together, hunt together and socialize with each other.

**PELAGE:** Another name for the fur coat of an animal.

**PLANTIGRADE:** Walking on the soles of the feet, as does a grizzly; a human does also.

**PREDATOR:** Any animal that hunts and kills another animal for food.

**PREY:** Any animal that is hunted or killed by another animal.

**RANGE:** The area an animal travels to find food and mates.

**RENDEZVOUS SITE:** A safe area where a wolf pack rests between hunts.

**RUB-MARKING:** Where bears bite, claw, or rub trees to indicate to other bears that they have been there.

**SCAPEGOAT:** The outcast, or lone wolf. This is a wolf that is not accepted by any other wolf in the pack. He usually leaves the pack on his own, or is forced to leave—may become a lone wolf, or might join another pack.

**SCAT:** An animal's excrement (poop!).

**SCAVENGER:** Any bird or animal that eats the remains (carrion) of a previously killed animal.

**SLEEPING CHAMBERS:** The part of the den where the bear hibernates and gives birth to cubs.

**SOW:** A female bear



**SPECIES:** Scientific classification of living creatures.

**STALK:** The act of sneaking closer to prey before rushing in to attack.

**SUB-ALPINE:** Mountain land slightly lower in elevation than alpine regions, characterized by taller trees, more plant growth, and steep mountain meadows. This region remains snow-free slightly longer than the alpine regions.

**SUBMISSION:** 1. Sign of non-aggression, or unwillingness to fight. 2. A behavior that indicates a low place in the wolf pack order of importance.

**SUB-SPECIES:** A scientific classification just below species; for instance, a Kodiak brown bear is a sub-species of *Ursos arctos*

**TEMPERATE:** The land areas below sub-alpine, usually lower mountain valleys. These areas are snow-free much longer each year than alpine or sub-alpine areas. These areas are characterized by a variety of plant and animal life, shorter winters, and abundant water.

**TERRITORY:** 1. The area of an animal's range which that animal will defend against intruders. 2. The area a wolf pack will defend against intrusion by other wolves. Territories are a smaller part of the wolves' range.

**THREATENED:** A species that may become endangered if their numbers and habitat continue to decline.

**TRACK:** The foot print left by an animal.

**TUNDRA:** Cold, treeless plains of the arctic and subarctic regions.

**TUNNEL:** A narrow chamber leading to the larger sleeping chamber in a den.

**UNGULATE:** Any hooved mammal, such as a deer, elk, moose, caribou, or mountain sheep.  
Common prey of wolves.

**VEGETATION:** Any kind of plant growth.

**YEARLING:** Any wolf between the ages of one and two.



# GRIZZLY BEARS

## TEACHER INFORMATION



# GRIZZLY STORY

## EARLY SPRING

It was a cold day in early spring. The threatening sky promised more wet snow, even though several south-facing hillsides were already bare. The large male grizzly, or boar, slowly emerged from his den dug into the hillside. Bits of dried grass and evergreen needles stuck to his fur. They had been part of the soft bedding in his den. He gave a lazy shake, sniffed the air, and wandered a short distance away.

In time, he slowly waddled down the slope, and headed toward the lower valleys several miles away. There the snow was melting, exposing skunk cabbage and horsetail shoots, miners' lettuce and glacier lilies.

These plants were the first food the grizzly had eaten in over four months. For the first few weeks, he traveled the slowly warming valleys, eating the small tender spring plants. Once, he caught scent of a dead deer and headed hungrily toward the smell. The deer had died of starvation. The grizzly gorged himself on the carrion for several days. The crows, ravens, and coyotes also helped themselves to the rotting meat when the grizzly was not guarding it.

As the weather grew warmer, his appetite increased. The plants were growing quickly, providing him with many choices in his diet. He dug for roots and bulbs, ate the tender plant tops and blossoms, and now and then he would get a real treat — a marmot or a ground squirrel, dug from its den under the rocks.



## LATE SPRING

**I**n late spring the boar picked up the scent of a female grizzly in his territory. He was interested in breeding but he had to be cautious. If the female had cubs she would fight him to defend her family. Usually, the female would convince the boar to leave, but occasionally she would be killed or injured and the cubs would be left to fend for themselves. Without their mother the cubs usually died. Male grizzlies would also attack cubs that had strayed from their mother.

## SUMMER

**I**n late June the big male found a female who had chased her two year old cubs away. They were big enough to be on their own, and she was now ready to mate again. The female and male went through a friendly courtship, traveling and feeding together in a peaceful manner. But as soon as the breeding season was over, the pair separated, having nothing further to do with each other.

Over the summer the boar wandered, digging roots, eating berries, and feasting happily on insects of many kinds. When he noticed there were fish spawning in great numbers in the streams, he went fishing. Any part of the fish he did not eat was left on the bank for other, less dominant bears. Crows and ravens sat nearby, waiting for their turn at the carrion.

Throughout the last part of summer, the bear steadily gained weight, continually adding to the thick layer of fat under his thick brownish-yellow coat.

## LATE SUMMER/FALL

**A**s the air grew chillier and the days became shorter he felt an insistent urge to find a den for the coming winter. He ate roots and berries along the way, and slowly traveled back to the higher elevations. His new den would be in the same general area as the previous year's den, but he would dig a new hole, and line it with fresh boughs and grasses.

On a north facing slope, about one-fourth mile from his old den, he found the right place. He used his long, sharp claws and strong shoulder muscles to dig out a huge amount of dirt from the hillside. He stopped working only to eat more roots and berries still clinging to the bushes. There had already been several snow storms and snow was on the ground. The time for sleep was approaching.



## WINTER

**T**he female he had mated with had already completed her den and was well into her winter sleep. She had lined her den much more carefully than the male, as she knew the bed had to be just right for her cubs when they arrived. Even though she had mated with the male, no cubs were growing inside her yet. As soon as she began her hibernation, the fertilized eggs attached themselves to the uterine wall and began to grow. This process, called delayed implantation, ensured that the cubs would not be born too soon. They grew inside her for about two months. One day in late December two tiny cubs were born. The mother laid peacefully in her den, nursing her blind and nearly hairless cubs, while winter raged outside.

The cubs grew quickly as they nursed on the mother's fattening milk. The mother dozed through it all, nudging and licking her babies even while half asleep. During the five months the mother was in the den, she did not eat, urinate, or defecate. Her body temperature was five to eight degrees below normal, and her heartbeat had slowed a little, but she was not truly hibernating, as the marmots and other rodents were doing.

If something disturbed the adult bears while they were in their dens they were alert enough to respond, even coming out of their dens to defend it in the middle of winter. During warm, sunny spells in late winter they might come out for a short time, only to re-enter until spring was really on its way.

## FOLLOWING SPRING

**I**t was early spring again. The big male grizzlies and the sub adults who had separated from their mother the summer before were all leaving their dens. They instinctively traveled once more to the lower valleys where the spring plants were growing.

The mother with the new cubs emerged from her den a few weeks later. By now the cubs were covered with warm fur, their eyes had been opened for weeks, and they were walking easily on their own. When the mother brought them out of the den into the bright sun reflecting on the snow, they dashed back to the entry tunnel. She was persistent however, and after three tries, managed to convince them to stay outside with her. Their curiosity soon won out over their fear of the unknown. They followed their mother down the snow covered hillside, sometimes enjoying a family sledding run. Even the mother enjoyed sliding on her rump in the snow.

The family headed to the rich feeding grounds in the lower valleys. The cubs were learning things from their mother every minute of the day. She taught them to climb up a tree to safety when danger threatened. She taught them all the best places



to dig for roots, insects, and other foods. She allowed them to play everyday with each other, and many times she even joined their games. They nursed regularly, gaining weight and height quickly from the rich milk. The sow spent the next year and one half being a loving, playful, but strict mother. She knew that she only had a short time to teach them all they needed to learn to survive on their own. They spent all that summer with her, and denned with her the next winter. Sometime during the following summer she chased them off, sensing that she was ready to mate again. In years when there was not much food, she might have kept her cubs with her for still another year. She would not mate until the food became more plentiful. This instinct would help insure that all of the bears in the area would not have to compete too actively for meager food supplies.



In years when the food was plentiful all summer, she might have a larger litter, maybe three cubs instead of the normal one or two.

As long as the bears are not threatened by their worst enemy - man; as long as they have plenty of room to follow the seasonal food sources; as long as they have private places far away from civilization to den, then the bears will survive for future generations.

Westward expansion in the last 150 years has caused problems for grizzly populations. As cities become larger more people are seeking homesites farther from urban areas and developments have pushed grizzlies out of their former ranges. The demand for wood products grows at a rapid pace. Hundreds of miles of new logging roads are built into remote areas, disturbing the bears' centuries-old range. More and more people travel into grizzly territory and the bears are losing the isolation they crave. The bears do not want to have anything to do with these two-legged intruders, but sometimes they feel forced to defend their territory. The intruders are afraid of the big bears, and many argue loudly in favor of destroying them.

Bears are an important part of the ecosystem. Their presence or absence affects plant communities and ungulate populations.

But who is man to judge whether or not another species is worth saving? Which species inhabited those lands first? Will the grizzly in Northern America soon be extinct, just because some people are fearful of him? These are some questions which need to be answered soon, while there is still time to save this impressive, solitary animal.

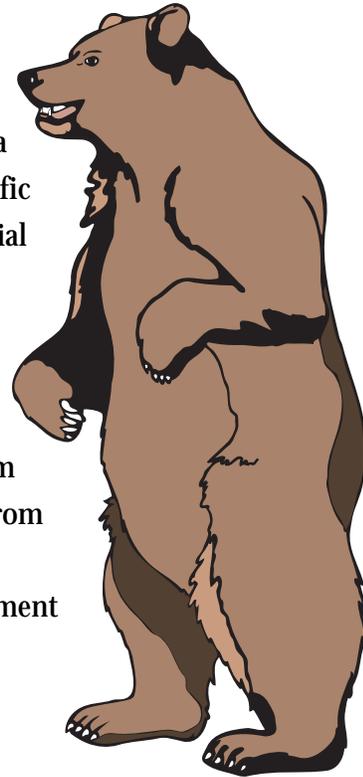
There are some very important and selfish reasons why scientists want to save the grizzly bear from extinction. To discover why scientists value bears as research subjects, read page 17-18 of this packet.



## **Grizzly Bear Population Prior to the 1800's**

Grizzly bears once inhabited areas in North America from the Arctic Circle down into Mexico and from the Pacific Ocean east to the Mississippi River. As long as seven essential habitat characteristics were present their population could survive. Those seven requirements are: space; isolation; sanitation; denning sites; safety; vegetation types; food.

In 1805 the Lewis and Clark Expedition reported seeing (and killing) many grizzlies in their travels west. From the early 1800's onward, grizzlies were steadily eliminated from the continental U.S.A. Hunters, poachers, habitat loss, and eradication programs sponsored by federal and state government all took their toll on grizzly bear populations.



## **Grizzly Bear Population from 1975 to Present**

Continued settlement in remote areas still threatens the grizzly bear's existence. As people settled in areas populated by grizzlies, they tended to destroy the habitat required by the big bears. Road building, logging, mining, and human presence all damaged one or more of the seven essential requirements. This activity took away an important habitat requirement—isolation.

Currently, grizzly bears exist in Yellowstone National Park and Glacier National Park - places where they are protected from hunters and poachers. There are small populations in isolated areas of Northern Washington and Idaho. In addition, grizzlies are found in areas surrounding Glacier and Yellowstone Parks, but once outside the parks, they are subject to poaching.

The grizzly bear was listed as a threatened species in the lower 48 states in 1982. This protected it from hunting and poaching.

Alaska has a large population of grizzlies, and a subspecies, the Kodiak Island brown bear. The hunting of the grizzlies is still allowed, although somewhat limited and regulated.

Remote areas of Northwestern Canada still claim grizzly populations mostly in the Yukon Territory and Northwest Territories.

What state has a grizzly pictured on its flag even though the big bear has been extinct there since 1924?

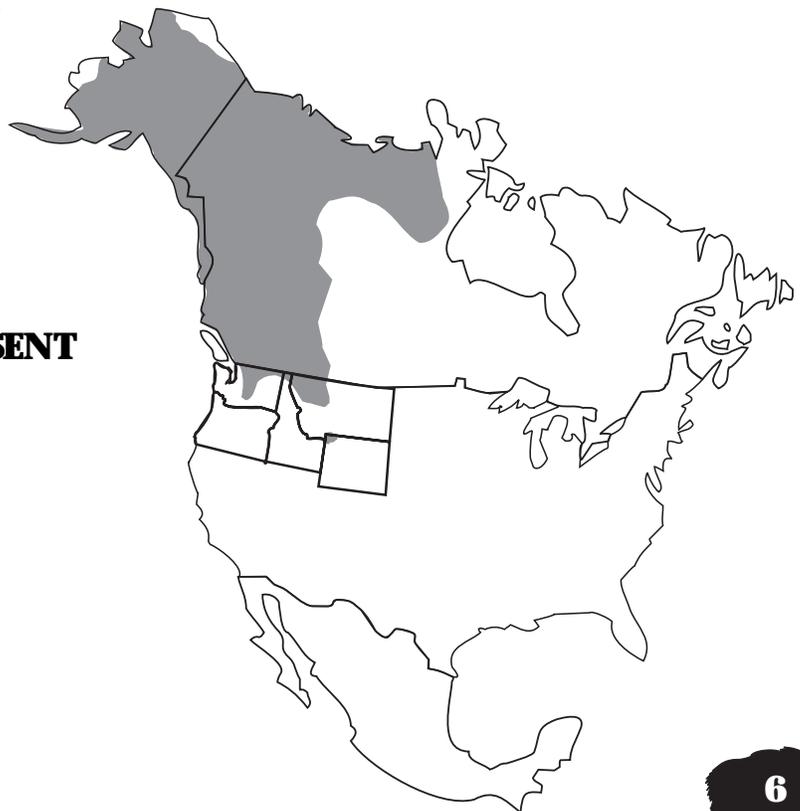


# GRIZZLY BEAR POPULATION

(INCLUDES ALL NORTH AMERICAN BROWN BEARS)



**PRIOR TO 1800**



**PRESENT**



# THE FABULOUS EIGHT THE EIGHT BEAR SPECIES

## MOON BEAR

Latin name: *Selenarctos thibetanus*

The Latin name means “moon bear of Tibet.” The moon bear also has many other names, including: Tibetan black bear, Himalayan black bear, and the Asiatic black bear. The moon bear is found in the Himalayas, Asia, parts of the former Soviet Union, Afghanistan, Iran, Taiwan, and the Japanese islands of Honshu and Shikoku.

This bear has the distinct marking of a crescent on its chest. The crescent can be white, yellow, or orange-yellow. The moon bear’s pelt is either black or brown and is soft and shaggy. The moon bear has short front claws and slender legs. The bear can weigh up to two hundred and fifty pounds and be as long as six feet. The male is actually one-fourth to one-third larger than the female.

The diet of the moon bear consists of insects, fruit, plant material, and carrion. The denning procedure of this bear varies depending on the climate. The females will always follow the ritual of denning, but the males might not hibernate. The dens may be caves, or holes dug out beneath tree roots.

The litter of a moon bear usually contains one or two 8 ounce cubs. The cubs open their eyes within one week and will forage for food with their mother after a month.

These bears could be forced into the threatened animal category, for a number of reasons. The Chinese view the paws of the bear as a delicacy, Laotians, and Taiwanese find the bile and bones to have some medical properties, and the cubs are important to the Indians of Pakistan and Afghanistan for circus use.

See maps for the location of wolves  
and close relatives on page 13 through 16



# SUN BEAR

Latin name: *Helarctos malayanus*

This bear is the smallest of the species. The nicknames include honey bear and Malay bear. The sun bear can be found in North East India, Southern China, Thailand, Malaysia, and the provinces of Borneo and Sumatra in the Indonesian Islands.

This bear, which weighs about 100 pounds and is about four feet long, is black with a white or yellow mark on its chest. Although the sun bear has sharp claws, and powerful jaws, it is primarily a herbivore. Its diet is mushrooms, honey, insects, fruit, and occasionally lizards and rodents.

The sun bear is able to mate after its third year. Because of its tropical habitat the bear does not hibernate, therefore the female doesn't experience delayed implantation. The cubs, born after a 100 day gestation period, weigh 9 ounces and are about seven inches long. They are able to hear and see after their second week, but they will not be able to walk until they are two months old.

# SLOTH

Latin name: *Melursus ursinus*

This bear also has the name lip bear. The sloth bear can be found in India, Sri Lanka, and parts of Nepal.

The bear can weigh up to two hundred and fifty pounds and be as long as six feet. The shaggy black pelt of this bear makes it look even larger than the bear's actual size. The bare belly and under leg and scarce amount of hair on the nose is a way the bear has adapted to its hot environment. The sloth also has a yellow or white marking on its chest that resembles the letters (y) or (v). The facial features of this bear are very distinct - protruding lips, no front teeth and very few molar teeth.

This bear's favorite insect is the termite. It will break a rotten log and will blow frantically to remove dust before eating the insects. This noise can be heard over two hundred feet away. The sloth also enjoys ants, maize or corn, yams, sugarcane, and berries. Since food is so plentiful for the sloth their habitat may consist of only about ten square miles.

The sloth bear doesn't hibernate, yet it does delay implantation and has dens where the cubs are born. The dens are usually under boulders or in caves. The litter averages two cubs which remain blind for three weeks. After about five weeks the sow will carry her young on her back while foraging. This will continue until the cubs are about one-third their mother's size.



# SPECTACLED BEAR

Latin name: Tremarctos ornatus

This bear may also be called the Andean bear, underbark bear, or black puma. The spectacled bear is the only survivor of the short-faced mammals which came across to America about 1.5 million years ago.

The spectacled bear is the only bear which can be found in South America. This bear has been found living in Ecuador, Peru, Chile, and Bolivia.

The bear has a shaggy appearance with white, red, or yellow markings which look like eyebrows. The pelt of the bear is black. The bear's average weight is between 175 to 275 and can be 6 feet long.

The spectacled bear is an herbivore for the most part, eating fruit, honey, and sugar cane.

# PANDA BEAR

Latin name: Ailuropoda melanoleuca

The panda bear can only be found in a few areas: portions of the eastern rim of the Tibetan Plateau and west central China. There has been an estimated count of 700 pandas in the wild and about 120 in captivity worldwide.

These bears have a look all their own with white hair marked with black patches on their ears, shoulders, chest, and limbs. The bear also has black circles around its eyes. The pandas can weigh from 200 to 230 pounds, usually the males will be about 15% larger than females. The males can be five feet long. The animal has forty-two powerful teeth to chew their main dietary food source, bamboo.

The panda bear has some unique features, which sets it apart from the other bear species. The panda has cat-like slit-eyes instead of the round pupils like the other seven species. The hind foot of the panda has no heel pad so it does not leave human-like track marks. The last unique feature of this bear is the ability to move its thumb independently because of an extra bone on the heel pad. This helps when breaking and eating bamboo.

The panda eats about thirty pounds of food a day. Most of its roaming is done during the early morning and dusk. Because its diet doesn't contain much fat the bear is unable to store enough body fat to go into hibernation. The bear will move down to lower elevations when weather becomes too cold.

The breeding period for the panda is between mid-March and early May. The animals do have a short period of delayed implantation and give birth to their cubs during the months of August and September. The actual gestation period is between three and a half and four and a half months.



# **POLAR BEAR**

Latin name: *Ursus maritimus*

The polar bear evolved from the Siberian brown bear during the glacial advancement which forced the bear to evolve into a carnivorous animal. The polar bear developed sharper teeth, refined claws, and the whitish hide. The polar bear is also the only bear with fur padding on the soles of its feet for better traction on the snow and ice. It also has a webbed membrane between the forepaws to make swimming an easy task.

This bear can be found in Greenland, North Canada, Alaska, the Arctic Circle region, and the Norwegian Islands. The polar bear also has a yearly migration route within the region it is found.

The female polar bear stops growing at age four. At maturity, it can weigh up to 700 pounds and attain a length of nine feet. The male bear grows for eight years, and can weigh more than 1400 pounds and can measure twelve feet or more.

The diet of the bear includes seal, walrus, carrion and in late summer blueberries, mushrooms, grass, duck eggs, and lemming when available.

The bears are able to mate between the ages of five to seven. The polar bear does delay implantation until October and delivers an average litter of three cubs in December or January. The hibernation of the polar bear may be interrupted periodically because of disruptive weather conditions; severe storms can cause movement of polar ice which may destroy a bear's den. This destruction frequently forces them to find another denning site. The male polar bears are very restless during hibernation and may only hibernate a few weeks.



# BLACK BEAR

Latin name: Ursus americanus

When translated, the Latin name of Ursus americanus, Ursus means “bear” and americanus means “America”. The black bear is found throughout North America.

The black bear can be observed in a number of colors, including black, light brown, blue-gray, or even white in certain environments. The male bears can weigh between 200 to 400 pounds, twice as much as females. The black bear has a straight face profile in comparison to the grizzly which has a dished face profile. The black bear is the smallest and most common bear in America. They can be five and a half feet in length. If you were hiking in the forest and saw a bear print, the black bear would have a wedge in the instep of the back print and would have a round heel.

The black bear is a true omnivore. Its diet in the spring consists of horsetail, sedges, grasses, and berries. During summer the diet ranges from wild berries to fish, carrion, insects, and moose calves.

The denning of the bear occurs in the late fall and extends into early spring between March and May. The dens are typically created at the base of a live tree, or in a hillside. Occasionally, they will den under slash piles or uprooted trees.

The male bears are able to mate at one year, the females between the ages of two or three, if healthy. Mating takes place in June, but the development of the embryo does not take place until the mother has gone into hibernation for the winter.

Two or three cubs are born in January or February. These cubs stay with their mother for two years, or until she is ready to mate again. Once she is ready to mate she will chase her sub-adult cubs away.



# GRIZZLY BEAR

Latin name: Ursus arctos

The grizzly has accumulated many different names throughout the centuries; some include, real bear, brown bear, badger, white bear, or silvertip.

These amazing creatures survive best in a wild, roadless environment which is not inhabited by mankind. Sadly, the grizzly is extinct in ninety-eight percent of its original roaming zone. At one time, there were fifty to one hundred thousand bears who roamed below the 48th parallel, now there are only about one thousand.

The bear immigrated to North America about 20 million years ago from Europe. The only two places grizzlies have not been found are Australia and Antarctica.

The grizzly bear has forty-two teeth and is an omnivore. The bear's front feet, which has claws four inches long, are nearly as dexterous as human hands. The back claws are one inch in length. The bear can be observed in a number of colors including blue-black, red, cinnamon, tan, and chocolate brown. They can weigh up to 800 pounds and be seven feet long. The three features which distinguish the grizzly bear from the black bears are the following: the grizzly has a hump behind its neck, a concave or dished face, and a shuffling walk, which makes the footprints close together.

The bear can begin reproducing at age four and mating takes place in the early summer (May to July). The female has delayed implantation until she is hibernating. The birth of one to four cubs takes place in February. The length of hibernation depends on the weather, sex and age of the bear, as well as its parental status. A den is dug for hibernation each year, typically in a steep hillside or dirt bank, and is lined with vegetation.



# LOCATION MAPS OF THE EIGHT BEAR SPECIES

## GRIZZLY BEAR



## BLACK BEAR



# LOCATION MAPS OF THE EIGHT BEAR SPECIES

## MOON BEAR



## SUN BEAR



# LOCATION MAPS OF THE EIGHT BEAR SPECIES

## PANDA BEAR



## POLAR BEAR



# LOCATION MAPS OF THE EIGHT BEAR SPECIES

## SPECTACLED BEAR



## SLOTH BEAR



# YOUR HEALTH AND BEAR RESEARCH

**R**esearchers are fascinated by the ways a bear's body functions during hibernation. Black bears are being studied in research stations to learn more about how they can help humans. Since black bears are more plentiful and are easier to work with, scientists prefer using them rather than grizzlies.

Bear research has already produced one substance that helps humans - ursodeoxycholic acid. This acid is found in the bile juice of hibernating bears. The acid is now used to dissolve cholesterol gall stones in humans. Ursodeoxycholic acid is being made synthetically in the lab so that a larger amount is available to doctors without having to extract it from live bears.

## **1. Kidneys**

Humans kidneys serve as blood scrubbers - filtering out poisonous wastes in the body, one of which is urea. When kidneys stop working correctly due to disease, these toxins can build up, causing illness and death. People with kidney diseases must undergo dialysis, or artificial cleansing of the blood, usually three times a week.

Bears in hibernation do not urinate to get rid of the filtered-out toxins, like urea. They burn fat, rather than protein during their long sleep. What little urea produced from the small amount of protein being burned up is apparently recycled through the body.

With this knowledge, scientists have developed a special diet for kidney patients. The diet contains low amounts of water and small amounts of protein. On this diet, kidney disease patients find they can go as long as ten days between dialysis treatments.

## **2. Osteoporosis and other bone disease**

In order to keep your bones solid and strong, you must exercise. People who are inactive for long periods of time slowly lose not only muscle mass, but also experience a loss of bone mass. The bones become softer and weaker. In addition, many older people, especially women, suffer from a disease called osteoporosis, which causes the bones to become less dense and very brittle and easy to break.

While bears hibernate they are inactive for four to seven months, yet they come out of the den with no loss of bone or muscle mass - in fact may times their bone mass and muscle mass grows while hibernating!



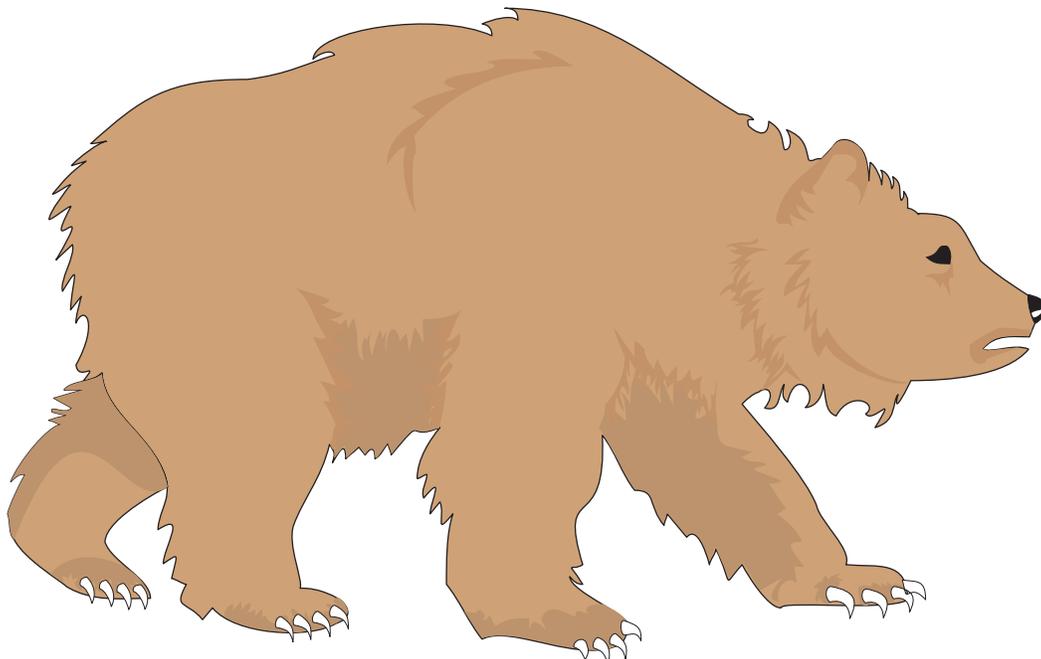
Scientists are examining bear blood carefully in an effort to find a new substance which allows the bear to recycle available calcium and phosphorus into healthy bone. They know that the urea available in the body is being recycled into proteins which build strong bones and muscles. Once they find the link between the processes, scientists may be able to find a cure for bone disease. In addition, their findings may help astronauts from suffering bone and muscle loss caused by long periods in low gravity environments.

### **3. Cardiovascular disease**

Scientists have found a link between a high fat diet and heart and cardiovascular diseases in humans. Bears eat huge amounts of fat and burn fat during hibernation, yet they have never been found to have cholesterol buildup in their blood, and don't suffer from hardening of the arteries. Scientists are trying to find out why in order to help people who suffer from cardiovascular disease.

### **4. Obesity and weight loss problems**

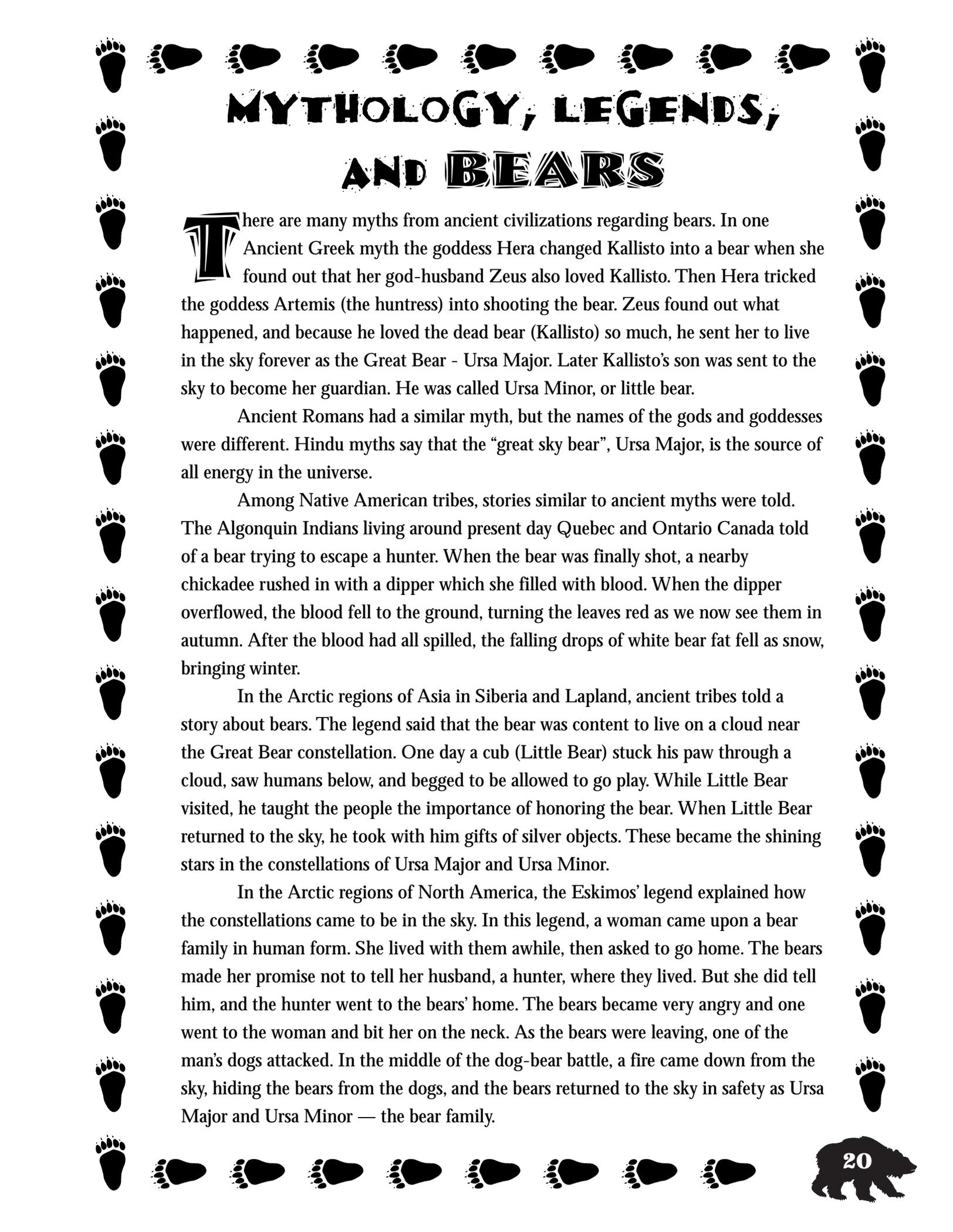
Bears eat tremendous amounts of food in the summer and fall to develop layers of fat in preparation for hibernation. While sleeping, their bodies metabolizes (or burns) this fat for energy and they lose 20 to 27% of their body fat before coming out again in the spring. Scientists are looking for a hormone or another substance which controls this cycle of feeding and fasting in hopes they can help people who are obese or suffer chronic weight loss problems.



# HOW NOT TO BECOME A BEAR'S LUNCH:

1. Store food properly - bear proof containers should be suspended high up between two trees.
2. Store all food well away from sleeping site.
3. No bedtime snacks in your tent - leave all food items, including candy, gum, and toothpaste, out of your tent.
4. Pay attention to bear warning signs in National Parks - don't go into areas where bear populations are high.
5. Pack out all garbage - garbage eating bears become habituated bears and become dangerous bears.
6. When hiking in bear country make noise by talking and whistling. This will warn bears ahead of your presence and give bears a chance to move peacefully away.
7. Pay attention - look for scat, tracks, and tree markings. If these signs are seen, you are in a bear's territory and you may want to choose another route.
8. If you see a bear, keep your distance - the closer you get to a bear the more threatened he or she may feel.
9. If you come near a bear with a food supply, act submissive and back away.





# MYTHOLOGY, LEGENDS, AND BEARS

**T**here are many myths from ancient civilizations regarding bears. In one Ancient Greek myth the goddess Hera changed Kallisto into a bear when she found out that her god-husband Zeus also loved Kallisto. Then Hera tricked the goddess Artemis (the huntress) into shooting the bear. Zeus found out what happened, and because he loved the dead bear (Kallisto) so much, he sent her to live in the sky forever as the Great Bear - Ursa Major. Later Kallisto's son was sent to the sky to become her guardian. He was called Ursa Minor, or little bear.

Ancient Romans had a similar myth, but the names of the gods and goddesses were different. Hindu myths say that the "great sky bear", Ursa Major, is the source of all energy in the universe.

Among Native American tribes, stories similar to ancient myths were told. The Algonquin Indians living around present day Quebec and Ontario Canada told of a bear trying to escape a hunter. When the bear was finally shot, a nearby chickadee rushed in with a dipper which she filled with blood. When the dipper overflowed, the blood fell to the ground, turning the leaves red as we now see them in autumn. After the blood had all spilled, the falling drops of white bear fat fell as snow, bringing winter.

In the Arctic regions of Asia in Siberia and Lapland, ancient tribes told a story about bears. The legend said that the bear was content to live on a cloud near the Great Bear constellation. One day a cub (Little Bear) stuck his paw through a cloud, saw humans below, and begged to be allowed to go play. While Little Bear visited, he taught the people the importance of honoring the bear. When Little Bear returned to the sky, he took with him gifts of silver objects. These became the shining stars in the constellations of Ursa Major and Ursa Minor.

In the Arctic regions of North America, the Eskimos' legend explained how the constellations came to be in the sky. In this legend, a woman came upon a bear family in human form. She lived with them awhile, then asked to go home. The bears made her promise not to tell her husband, a hunter, where they lived. But she did tell him, and the hunter went to the bears' home. The bears became very angry and one went to the woman and bit her on the neck. As the bears were leaving, one of the man's dogs attacked. In the middle of the dog-bear battle, a fire came down from the sky, hiding the bears from the dogs, and the bears returned to the sky in safety as Ursa Major and Ursa Minor — the bear family.

# NATIVE AMERICANS AND BEARS

## KWAKIUTL (WESTERN BRITISH COLUMBIA)

- 👣 A hunter who killed a grizzly was said to inherit its powers, becoming fierce and unpredictable.
- 👣 Parents in this tribe desired the grizzly's power and ability as a gatherer for their daughters.



## ATHAPASKAN (NORTHERN CANADA)

\*SEE ALSO NAVAJO

- 👣 After slaying a bear, the hunters cut off its front paws and poked out its eyes so the animal could not hurt them or see who killed it.
- 👣 Hunters of this tribe were avid and skilled bear hunters who also loved to eat the meat of black bears.
- 👣 Women and girls from this tribe avoided all contact with bears, live or dead.



## TLINGIT (YUKON TERRITORY, COASTAL TRIBE)

- 👣 This tribe believed that grizzlies were half human, and told legends about bear-human marriages.
- 👣 Tribal members refused to kill the grizzly, but often killed black bears.
- 👣 Hunting black bears with dogs was a common practice in this tribe.
- 👣 Tribal members always spoke carefully of bears because they believed that bears had power of human speech and understanding.



## **YAVAPAI (ARIZONA)**

- 👣 This tribe believed that bears were like people except they lacked the ability to make fire.
- 👣 They didn't eat bear meat because it would be like eating a person.
- 👣 They believed that a bear was the first great shaman, or medicine man (healer).



## **EASTERN CREE (EASTERN CANADA)**

- 👣 Crees traditionally killed black bears while they were in their dens.
- 👣 When preparing for a hunt, hunters NEVER said the word "bear" but referred to him as "grandmother," "cousin", or "brother."
- 👣 The hunters took a sweat bath before the hunt to be properly clean before entering the forest.
- 👣 Their belief was that the only proper way to kill a bear was with a club, or a spear. Using a bow and arrow was taboo. They believed hunters should be closely matched in battle with the bear.
- 👣 They did not gut or skin the bear in the forest as they did with other animals. They performed that as part of the ceremony upon returning to camp.
- 👣 Bears were considered valuable because of the body fat which could be rendered into an excellent grease.
- 👣 This tribe, along with other Indian tribes, honored ALL animals killed.



## **KOOTENAI (SOUTHERN BRITISH COLUMBIA)**

- 👣 These people thought the grizzly was the most powerful of all spirit guardians.
- 👣 Their name for the grizzly meant "real bear"
- 👣 The black bear was considered spiritually weak in comparison to the grizzly bear.
- 👣 Tribal members sang, prayed and danced every spring as protection against being killed by a bear during the coming year.



## NAVAJO

(ORIGINALLY PART OF THE ATHAPASKAN TRIBES WHICH MIGRATED SOUTH OVER 1,000 YEARS AGO)



- 👣 Navajo tribes and sub-Arctic tribes hunted bears in their dens.
- 👣 Navajos and related tribes preferred using clubs and spears.
- 👣 Along with sub-Arctic tribes, they spoke to bears before and after hunting them.
- 👣 They decorated the carcasses and had a solemn feast of bear meat.
- 👣 The Navajos ONLY ate bear meat when they were on the verge of starvation. (differing from sub-Arctic groups)
- 👣 The bones were disposed of in special rituals.
- 👣 It was taboo to say the word “bear” before or during a hunt. (fine “young chief”, “grandmother”, “elder brother”, used instead).
- 👣 The Navajos rarely hunted bear, except when the shaman required bear paws or gall bladders for ceremonies.

## OJIBWA (WOODLANDS OF WISCONSIN, MINNESOTA, ONTARIO)

- 👣 They referred to the bear with a word that meant Indian.
- 👣 Their secret society, (Medicine Lodge Society) had initiation rituals that involved bear. Members were sent to follow bear paths.



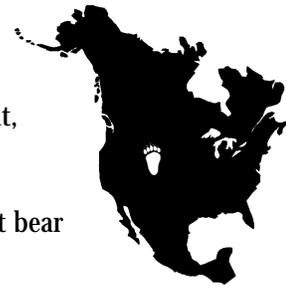
## SIOUX (GREAT PLAINS TRIBES, ALSO CALLED DAKOTA OR LAKOTA)

- 👣 They honored the bear because he knew the secrets of the plants.
- 👣 Bear dances were performed to heal the sick and those injured in battle.



## BLACKFEET (WESTERN PLAINS)

- 🐾 Shamans used bear hides for ceremonies, and warriors could possess claws. For all others, it was taboo to kill, eat, or use the hide of a bear.
- 🐾 The tribe would choose to starve to death rather than eat bear meat.
- 🐾 When hunting in bear country, they talked out loud, telling bears they were NOT looking for bears.
- 🐾 There were no grizzly bears but many black bears lived in the woodlands.



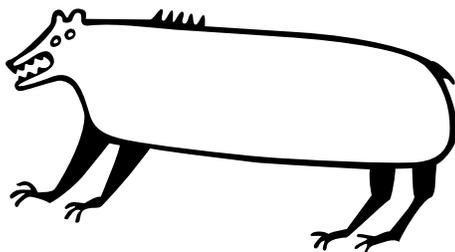
## PLAINS TRIBES IN GENERAL

- 🐾 Bears were not generally hunted because enough other kinds of game were available. Many tribes had exclusive bear societies. A shaman with the bear's power was considered to be the greatest healer of all.



## OTHER TRIBES IN GENERAL

- 🐾 Tribes that hunted the black bear for food avoided the grizzly. Those tribes that did hunt the grizzly treated the hunt and the bears with extreme respect.
- 🐾 Many tribes thought that the bears were the guardians of the plant medicines.
- 🐾 Most tribes recognized the similarities between bears and humans — both in their body shape, their diet, and also in the way in which both human mothers and bear mothers are fierce protectors of their young.



Plains Grizzly Bear



Northwest Coast  
Grizzly Bear



Southwest Grizzly Bear



## indian bear art

# BEARS

## TEACHER'S ANSWER KEY AND IDEAS FOR EXTENDED ACTIVITIES

### **page 1, student workbook: Knowledge Check**

Extended Activity: Using a large sheet of butcher paper, have the class brainstorm everything they know or have heard about bears. Leave this list up throughout the unit. Cross off untrue statements as the class learns the facts.

### **page 1-4, teacher info: Grizzly Story**

 Having the class read this out loud will enable you, as the teacher, to expand and explain the information more thoroughly.

Extended Activity: Have the students use the information in the “Grizzly Story” to create their own book with their own illustrations.

### **page 2, student workbook: Do You Know the Facts?**

 This is up to the students. Make sure they identify their resources and write in complete sentences.

### **page 5-6, teacher info: Population of Grizzly**

Bonus answer: California

Extended Activity: Compare the grizzly bear population and the wolves’ population. Do you see any similarities or differences? Write about the outcome of your research.

Extended Activity: Find out if there are any other states where the grizzly is no longer living.

Extended Activity: Why is the grizzly bear on the California flag?

Find out why the grizzly bear is still on the California state flag. Do you think the state of California should change the flag because grizzly bears are now extinct in California? If so create another flag for the state of California.

### **page 7-16, teacher info: the fabulous eight fact sheets & maps**

 Create a bulletin board matching activity with maps and fact sheets of each bear.

Extended Activity: Have the students mark on a blank world map all the other areas where the brown bear (*Ursus Arctos*) is still found. They will locate the areas as they do research in other books.



## **page 4-7, student workbook: Grizzly prints**

 Discuss as a class compare the similarities and difference with other bear species.

1. a. The grizzly front track is larger than the black bear    b. Again the grizzly has a larger track.
2. depending on child.
3. depending on child
4. depending on child
5. The grizzly bear width is larger.
6. depending on child

## **page 8, student workbook: How Does the Grizzly Measure Up?**

 This information is found in the bulletin activity on pages 24-29 in the teacher's manual

## **page 9, student workbook: Bears: True or False**

1. T   2. T   3. T   4. F   5. T   6. F   7. T   8. T   9. T   10. F   11. F   12. T   13. T   14. T

## **page 10, student workbook: Bear Communication**

Bonus: Becoming accustomed to human presence, losing fear of humans.

This would be dangerous because the bears would follow through on their curiosity.

\*\* The students may have many other reasons.

Extended Activity: Create a number of scenarios. choose one or two students for each scenario. Have the students act out the scenario, while their classmates try to determine what the situation is. Use only the communication techniques of the bear.

## **page 11, student workbook: Bear Language**

 Use another word with several different meanings to explain this activity before letting the students do this independently. Example word: burn

 Make sure the students are familiar with a dictionary.

## **page 20, teacher info: Mythology, Legends and Bears**

 May want to read this with the whole class. The class can then discuss the similarities and differences in myths, legends, and fairy tales

 Discuss the difference between myths, legends, and fairy tales compared to reality.



## **page 13, student workbook: Role of the Bear in Mythology and Legends**

 This is up to the students. Make sure the students understand they are to do all four activities.

 The fifth one would be an extra bonus and a great activity for those students who complete their work early. This would also be a nice activity to share with parents for parent involvement.

 Discuss the difference between myths, legends, and fairy tales compared to reality.

## **page 21-24, teacher info: Native American and the Bear**

 Discuss the similarities and differences between tribes.

 Have the students cut-out the individual Tribes and match them to the correct states.

Extended Activity: Allow the students to pair up and choose one Native American tribe. Have the students compare the similarities and differences in the relationship between bears and wolves. Use sheet number 20 for the relationship between Native Americans and wolves.

## **page 14, student workbook: A Tale of a Teddy!**

 This is up to the students. Have the students' parents help them in identifying the Ideal Toy Company label on their toys. The students can use their siblings' toys as well.

## **page 15, student workbook: Similarities and Differences - Bear and Human**

 This activity is called a Venn's Diagram. Use this only as a guideline when assisting the students in completing their diagram. Students will come up with more details than are listed here. It may be helpful to do a small part of this diagram on the overhead or the chalkboard as a group activity.

 Ideas students may come up with:

bear: hibernate in winter, father doesn't help raise young, covered with thick fur, delayed implantation, 2 months actual gestation period, blind at birth, mother's abandon young at age 2.

human: fathers help raise young, very little body hair, eyes open at birth, mothers care for children until their late teens, or even beyond, 9 month gestation period.

bears and humans: plantigrade walkers, omnivores, mothers protects young, mothers teach young, babies born helpless



## **extension: Similarities and Differences Bear and Wolf**

 This activity is called a Venn's Diagram. Use this only as a guideline when assisting the students in completing their diagram. Students will come up with more details than are listed here. It may be helpful to do a small part of this diagram on the overhead or the chalkboard as a group activity.

 Ideas the students may come up with:

bears: plantigrade walker, omnivores, hibernate in winter, delayed implantation, fathers don't help in raising cubs, prefer to live alone

wolves: digitigrade walkers, carnivores, fathers help in raising pups, live in a pack

bears and wolves: Both born blind, communicate with body language and vocalization, like to play, mothers nurse the young, 2 month gestation period, mothers protect the young

### **page 16, student workbook: Word Clue for Grizzly**

- |                |                |
|----------------|----------------|
| 1. day bed     | 11. bulbs      |
| 2. dens        | 12. cannibal   |
| 3. fairy tale  | 13. scavengers |
| 4. range       | 14. mate       |
| 5. grizzly     | 15. scat       |
| 6. female      | 16. stand      |
| 7. dish        | 17. habitat    |
| 8. plantigrade | 18. growl      |
| 9. mother      | 19. endangered |
| 10. predator   |                |

The hidden word is **delayed implantation**



**page 17, student workbook: Word Find**



**page 18, student workbook: Math Addition**

1. 252
2. 176
3. 223
4. 221
5. 188
6. 909
7. 215
8. 246

**page 19, student workbook: Math Subtraction**

1. 155
2. 78
3. 141
4. 36
- 5 a. 78 b. 36
- 6 a. 152 b. 240
- 7 a. 49 b. 316
- 8 a. 10 b. 31



**page 20, student workbook: Math Multiplication**

1 a. 63 b. 12

2 a. 27 b. 40

3 a. 30 b. 45

4 a. 16 b. 72

5 a. 56 b. 36

6 a. 20 b. 18

7 a. 28 b. 42

8 a. 18 b. 14

**page 21, student workbook: Math Division**

1.6   2.6   3.9   4.9   5.9   6.9   7.5   8.6

**page 22, student workbook: Math - Multiplication and Division**

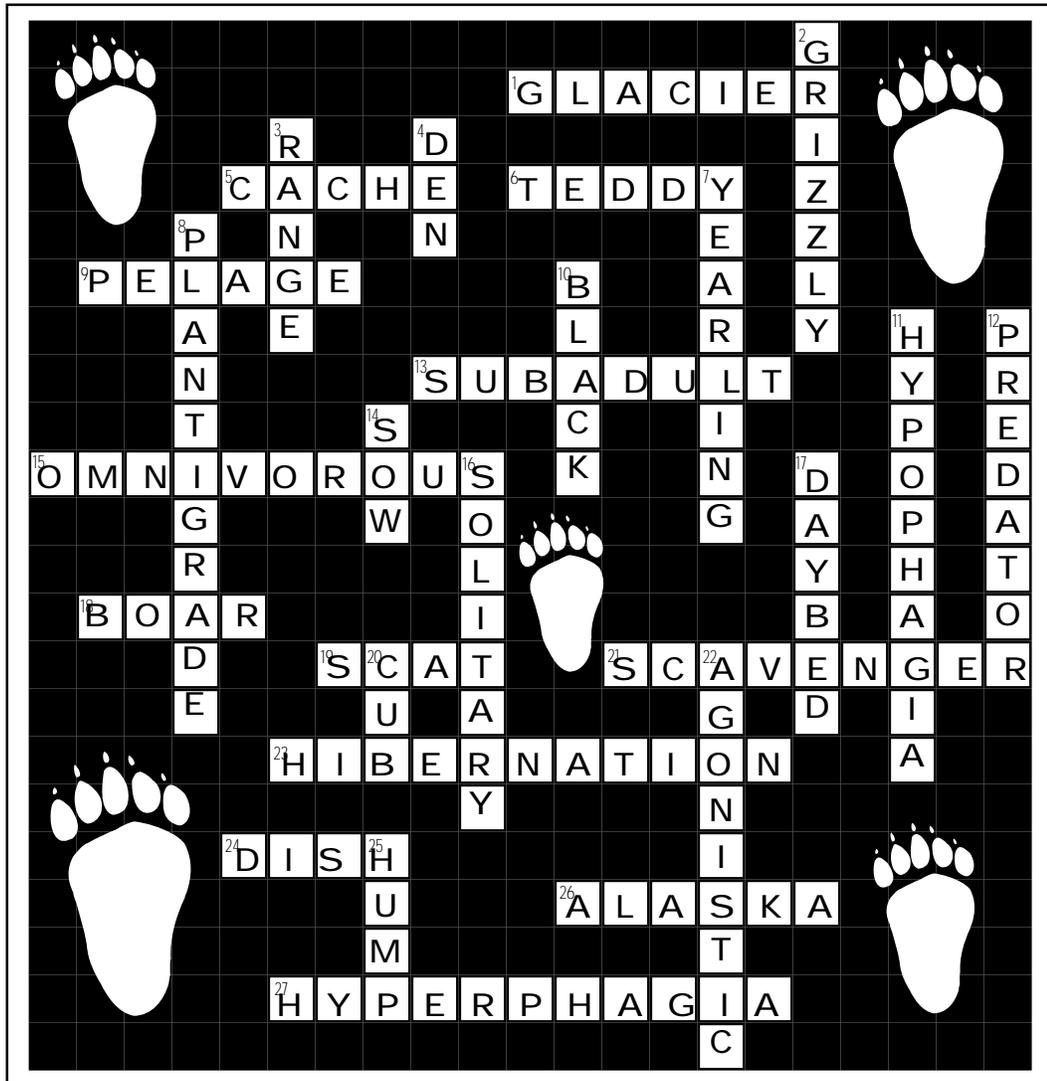
1. 3741      2. 14      3. 9      4. 6417      5. 7865      6. 6      7. 23      8. 1456

**page 23, student notebook: How Many Grizzlies Do You See?**

Total number: We have no idea!



## page 24, student workbook: Bear Crossword



### extension: Research

Extended Activity:

Great time to talk about the positive and negative effects of research. Have the students locate information about other animals involved in research. Have the students write their own opinion of animals used in research. Remind students to look at both sides before writing.

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# BEAR BOOKS

## **Bears in Their World**

Bauer, Erwin. New York: Outdoor Life Books, 1985, 254 pages, \$32.95.

This volume extensively covers the various aspects of North American bears: the black, the grizzly (or brown), and the polar. In addition, it includes many excellent action photographs of bears in full color. The author also addresses conservation and extinction issues. Grade 4 through adult.

## **Track of the Grizzly**

Craighead, Frank C. Jr. San Francisco: Sierra Club Books, 1982, 261 pages, \$14.95.

This easy-to-read softcover book covers hibernation, denning, mating, and hierarchy as well as bureaucratic issues related to the grizzly. Although limited to the grizzly, it is a useful resource. Grade 5 through adult.

## **Bears of the World**

Domico, Terry, and Mark Newman. New York: Facts on File, 1988, 189 pages, \$29.95.

This excellent book provides detailed information on eight species of bears. It carefully reviews each individual species in regard to food, reproduction, habitat needs, as well as specific characteristics. There is also a chapter devoted to safety. The pictures accompanying each section are gorgeous. Range maps are not all accurate. Grade 6 through adult.

## **Goldilocks and the three Bears**

This timeless children's story can be found in many versions, the price and publisher varying with the version. This book, as well as Winnie-the-Pooh, illustrates well the myth of bears. Grade 1 through adult.

## **Beg Attacks Their Causes and Avoidance**

Herrero, Stephen. Piscataway, NJ: Winchester Press, 1985. 287 pages, \$9.95.

Although the author gives background information on attacks and their avoidance in this softcover book, it is the personalized stories of real life bear encounters that make this fascinating reading. These accounts are especially helpful when considering safety issues for both bear and humans. The chapter on bear management addresses several unresolved management questions. Grade 6 through adult.

## **The Wild Bears**

Laycock, George. New York: Outdoor Life Books, 1986, 272 pages, \$19.95.

This softcover book tells about the grizzly and the black bear in storybook format. It includes stories of conflicts between bears and humans. Grade 5 through adult.

## **Looking at the Grizzly: Facts, Folklore, Physiology in Biologue**

Teton Science School, Kelly, WY: W. 1987, Vol. 1, No. 3, 15 pages, \$2.00.

This issue of Biologue provides excellent background information on certain aspects of grizzlies such as prey, food, habitat, and myths. Grade 5 through adult.

## **Winnie-the-Pooh**

Milne, A. A. New York: E. P. Dutton, 1988, 176 pages, \$9.95.

Just a quick glance through this timeless children's storybook rekindles thoughts about Pooh's cute antics. It blends myth and reality and helps explain how people regard bears from their early formative years. Grade 4 through adult.



## **Guardian of the Forest: A History of the Smokey-the-Bear Program**

### **Bearman: Exploring the World of Black Bears**

Pringle, Laurence. New York: Charles Scribner's Sons, 1989, 42 pages, \$13.95.

This book is about Lynn Rogers, the "Bearman," and how he got interested in bears, especially black bears. Pringle also discusses many important facts about the habits of the black bear in an easy, but factual, style. In addition, he includes many of Rogers' personal photos. Grade 4 through adult.

### **American Bears**

Roosevelt, Theodore. Edited by Paul Schullery. Boulder, CO: Colorado Associated University, 1983, 193 pages, \$8.95.

Schullery captures the spirit of Roosevelt's early years as a hunter in this edited version of Roosevelt's writings. Good background information about the bears and hunting philosophy of the early 1900s. Grade 6 through adult.

### **The Sacred Paw**

Shepard, Paul and Barry Sanders. New York: Mlking Penguin Inc., 1985, 243 pages, \$17.95.

The authors tell about bears in nature, myth, and literature in an easy-to-read, interesting style. Grade 6 through adult.

### **The World of the Black Bear**

Van Wormer, Joe. New York: J. B. Lippincott Co., 1966, 163 pages, no longer in print.

This book, although no longer in print, provides excellent background information on the black bear. It is worth a trip to the library to use as a resource. Grade 5 through adult.

### **Bears**

Wexo, John Bonnett. San Diego: Wildlife Education, Ltd., 1987, 18 pages, \$2.95.

This succinct 18-page booklet in the Zoobooks series briefly describes the major bear species with wonderful color graphics and map locations. Grade 4 through adult.



# BEAR

## RECORDS, FILMS, VIDEOS

### **Symphony No. 82 in c, the Bear**

Haydn, Joseph, composer; performed by the Academy of St. Martin-in-the-Fields; directed by Neville Marriner, \$9.98. This record can provide background music while students work on the various bear projects. Grade 6 through adult.

### **Grizzly and Man: Uneasy Truce**

Audubon, 60 minutes, \$39.95 video.

This video explores the question of whether man and grizzly can peacefully co-exist. It also examines solutions for the preservation of the grizzly. Grade 6 through adult.

### **The Grizzlies**

National Geographic, 60 minutes, \$39.95

This video examines the myth, legend, reality, and future of the grizzly bear. Grade 4 through adult.

### **All American Bear**

Nova, 60 minutes, \$39.95.

This video on black bear hibernation as well as a year in the life of a bear is available for purchase. Grade 5 through adult.

### **Bear Country**

Walt Disney Productions, 1952. 31 minutes, \$250 video, \$655 16 mm.

This classic in the "true-life adventure" series focuses on the black bear of the Rocky Mountains. Although anthropomorphic at times, the presentation is still fresh and entertaining and still accurately portrays the world of the black bear. Grade 2 through 6.



NAME: \_\_\_\_\_

# WOLVES

## STUDENT WORKBOOK

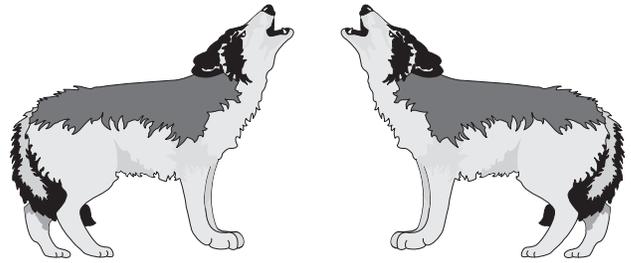




# WOLVES FACT OR FICTION ?

## Directions:

Write five statements about wolves.



## ITEMS TO PROVE:

Example: Wolf packs have a pair of wolves who are the leaders.

1.

2.

3.

4.

5.

---

## Directions:

List the titles of the resources you used to prove the statements in the above section.

## RESOURCES USED:

Example: Wolf book

1.

2.

3.

4.

5.

---

## Directions:

Write the corrected facts as statements. Use complete sentences.

## THE REAL TRUTH:

Example: Each wolf pack has an alpha male and alpha female who are responsible for the pack.

1.

2.

3.

4.

5.

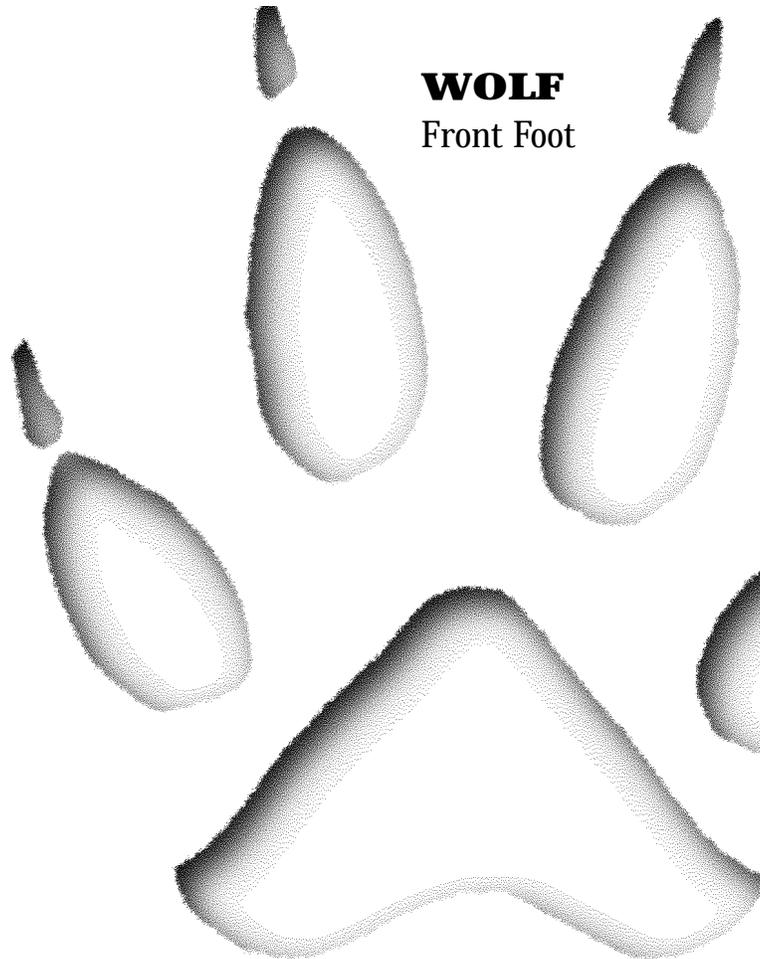


# Tracks

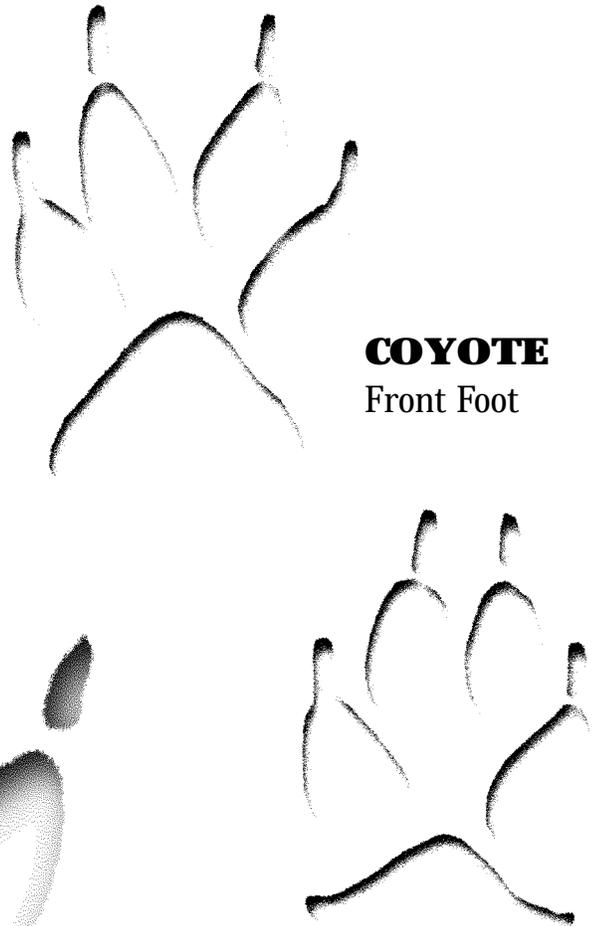
(Actual Size)

Measure each foot with your inch ruler and centimeter ruler.

Compare the size of the two species tracks. Measure to the nearest 1/4 inch.



**WOLF**  
Front Foot



**COYOTE**  
Front Foot

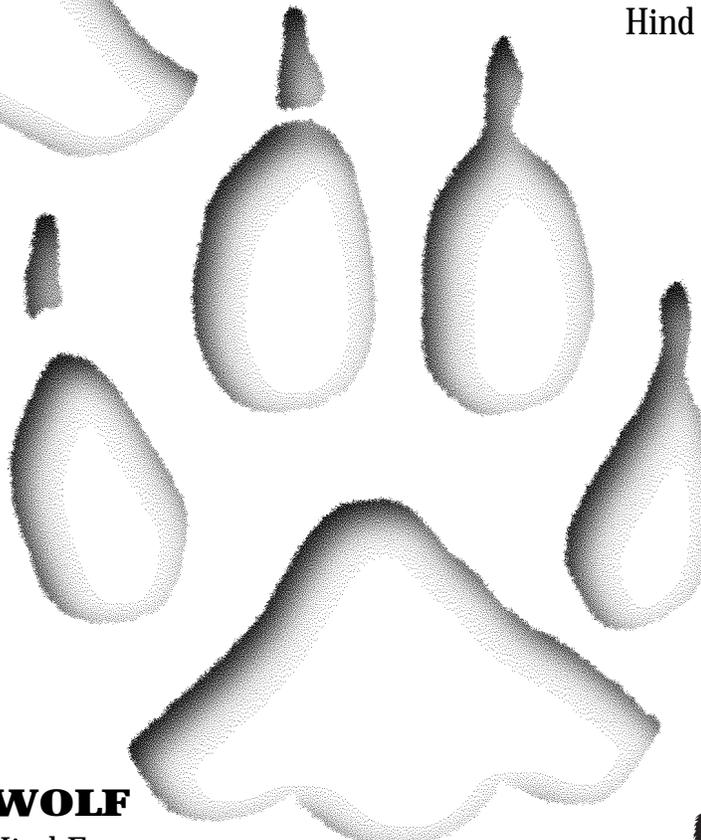
**Wolf Front** \_\_\_\_\_ inches  
\_\_\_\_\_ centimeters

**Wolf Hind** \_\_\_\_\_ inches  
\_\_\_\_\_ centimeters

**Coyote Front** \_\_\_\_\_ inches  
\_\_\_\_\_ centimeters

**Coyote Hind** \_\_\_\_\_ inches  
\_\_\_\_\_ centimeters

**Your Foot** \_\_\_\_\_ inches  
\_\_\_\_\_ centimeters



**WOLF**  
Hind Foot

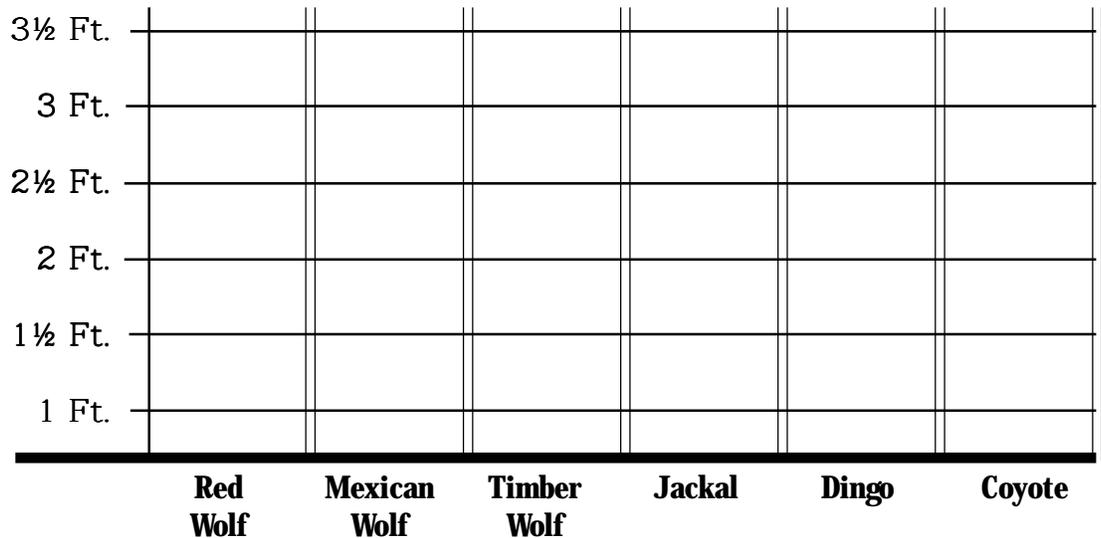
**COYOTE**  
Hind Foot



# HOW DOES THE WOLF MEASURE UP?

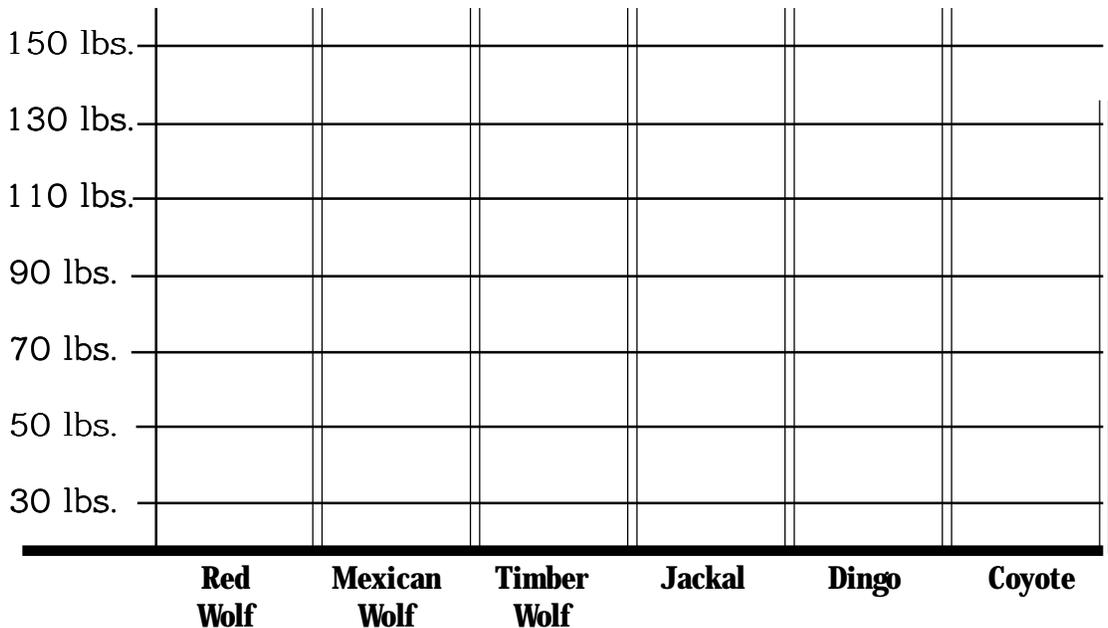
## DIRECTIONS:

Use the resources available to locate the length of the six wolves and close relatives. Place their measurement on the graph.



## DIRECTIONS:

Find the weight of the six wolves and close relatives and graph them accordingly.





# CHECK YOUR WOLF COMMUNICATION SKILLS

👉 A role playing activity to do with teacher assistance using the next page as a guide.

What do you think is being communicated?

## **FIELD NOTES...**

### **scenario 1**

---

---

---

---

### **scenario 2**

---

---

---

---

### **scenario 3**

---

---

---

---

### **scenario 4**

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### **scenario 5**

---

---

---

---

### **scenario 6**

---

---

---

---

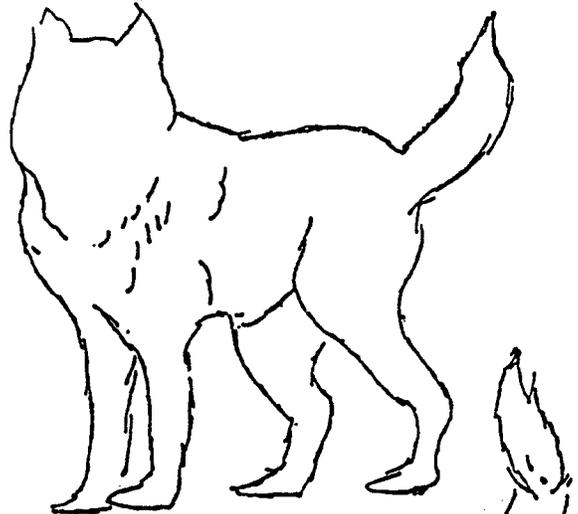


# WOLF

## BODY LANGUAGE

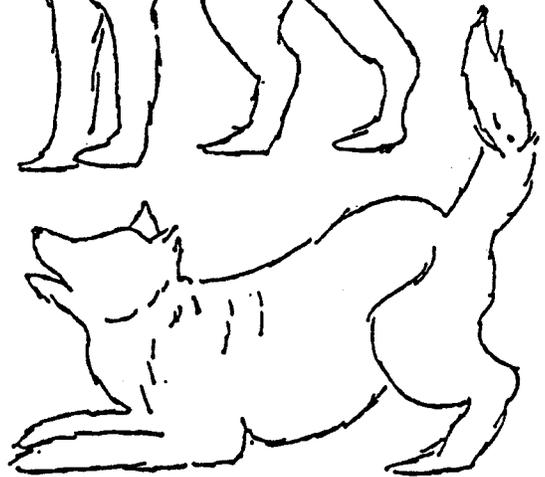
### ALPHA BEHAVIOR

- 🐾 Tail held high and bushed out
- 🐾 Head held high
- 🐾 Fur coat puffed to look even larger
- 🐾 Ears pointed forward
- 🐾 A relaxed body posture
- 🐾 An assertive pose



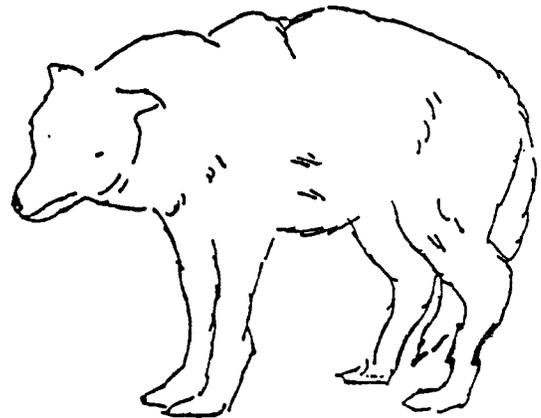
### PLAYING POSITION

- 🐾 Tail wagging
- 🐾 Ears pointed forward
- 🐾 Face relaxed and almost smiling
- 🐾 Hind end up in air



### SUBMISSIVE BEHAVIOR

- 🐾 Tail flattened
- 🐾 Tail may be held between legs
- 🐾 Head held low to the ground
- 🐾 Ears lowered and flattened to head
- 🐾 Eye contact with other wolves avoided



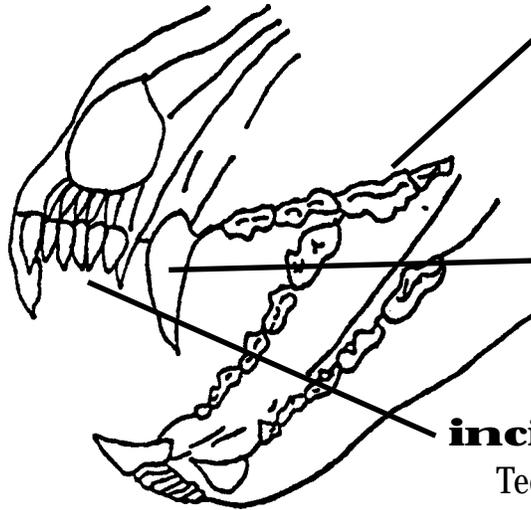
### DON'T HURT ME

- 🐾 Wolf rolls over on back and exposes its belly
- 🐾 Tail held between back legs
- 🐾 Head held down
- 🐾 Mouth closed and tense
- 🐾 Ears held back and down
- 🐾 Eye contact with another wolf is avoided



# jaws

## WOLF JAW STRUCTURE AND TEETH



**carnassial** (kar-nas-ee-al)

Used for chewing into smaller pieces for swallowing. How are these different from the bear's molars?

**canine** (kay-nine)

Teeth used to grab and hold onto prey.

**incisors** (in-size-ors)

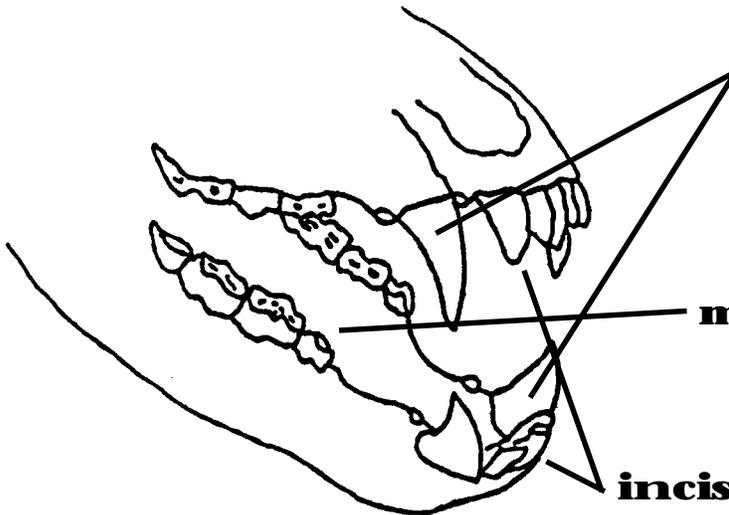
Teeth used to pick meat off bones. Where are your incisors? What do you use them for?

**Find a picture of a wolf or dog skeleton and a bear skeleton.**

**Find three differences and three similarities.**

**How are your teeth the same or different from wolves and bears?**

## GRIZZLY JAW STRUCTURE AND TEETH



**canine** (kay-nine)

Used for catching and killing prey. Also used for ripping meat from carcass.

**molars** (mow-lers)

Used for smashing and grinding plant food.

**incisors** (in-size-ors)

Used for catching and killing prey. Also used for ripping meat from carcass.

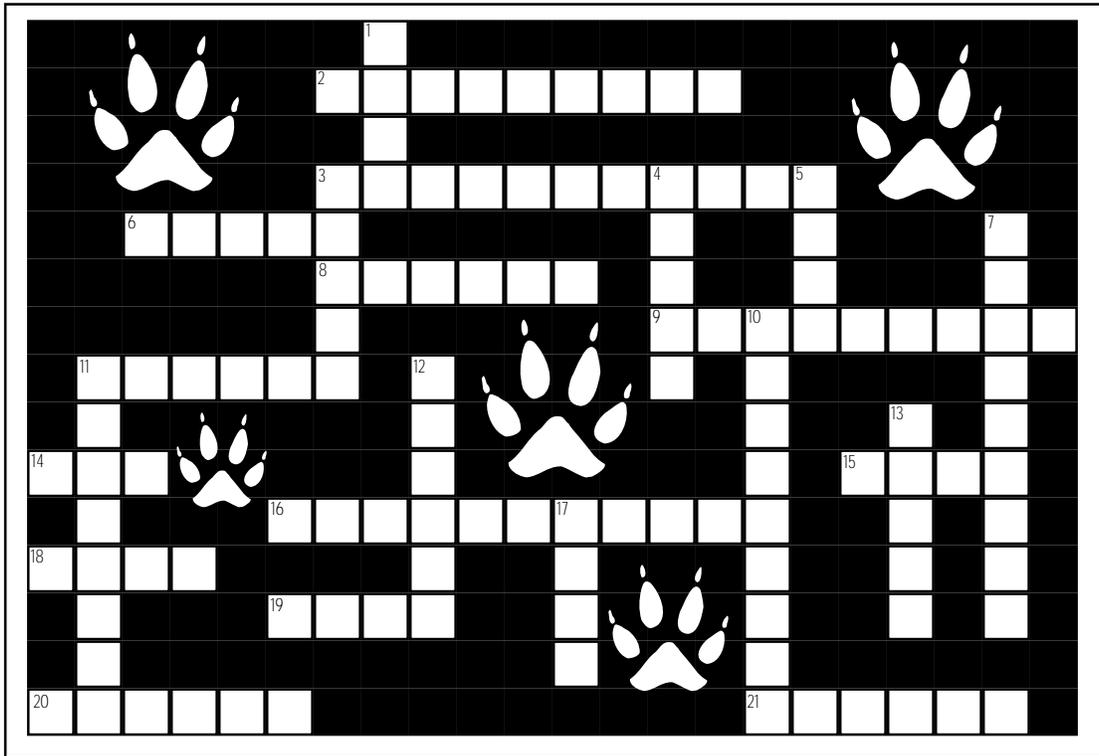
**How are your teeth and the grizzly's teeth alike? How are they different?**



# WOLF CROSSWORD

## word list

agonistic  
 scat  
 digitigrade  
 carnivorous  
 range  
 gestation  
 alpha  
 territory  
 beta  
 canine  
 family  
 den  
 pack  
 artic  
 predator  
 prey  
 gray  
 tundra  
 lupus  
 pups  
 cache  
 scapegoat  
 pelage



### Across:

2. The area in which a wolf pack lives
3. Meat eating
6. The female or male leader in the pack
8. Wolves are part of the \_ \_ \_ \_ \_ family
9. Period of pregnancy
11. Name for a wolf's body covering
14. Where the female has her pups
15. Young wolves, under one year of age
16. A word to describe how wolves walk
18. A group of wolves
19. A caribou, moose, or deer could be \_ \_ \_ \_ for a wolf
20. An area in the far North where white wolves live
21. Treeless plains in the far North

### Down:

1. Second most important male or female in the pack
3. Stored food supply
4. The area in which a wolf travels and hunts
5. \_ \_ \_ \_ can be examined by biologists to discover what a wolf has been eating
7. Aggressive behavior
10. The outcast, or loner, on the fringes of the pack
11. Any animal that hunts other animals for food
12. A pack is a \_ \_ \_ \_ \_ much like that one you belong to
13. Scientific name for wolf Canis \_ \_ \_ \_ \_
17. A common color for wolves; part of common name for North American wolves.

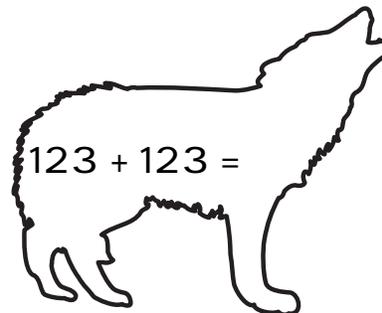
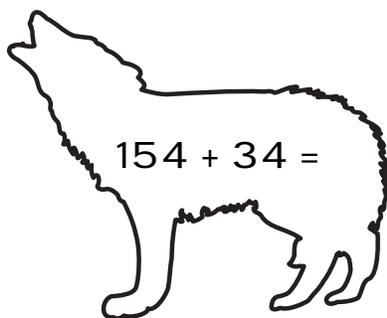
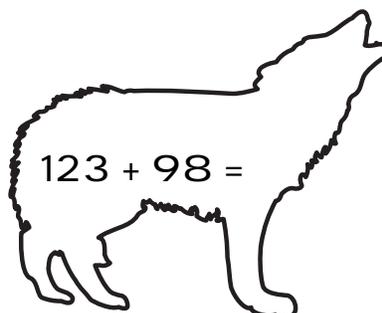
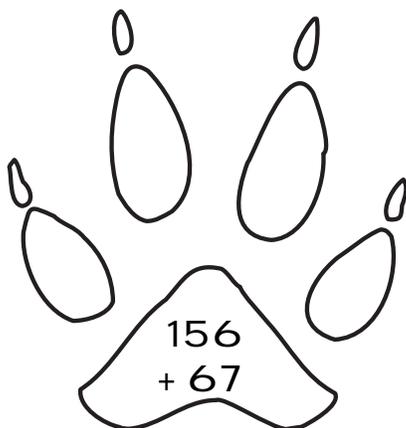
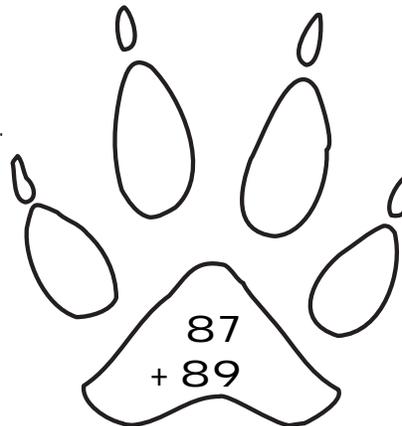
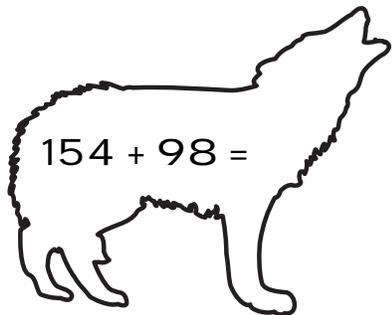


# WOLF MATH

## ADDITION

### Directions:

Please show your work on a separate sheet of paper if there is not enough space available.

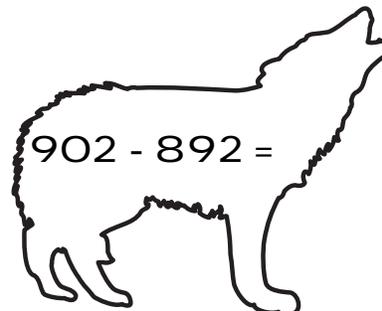
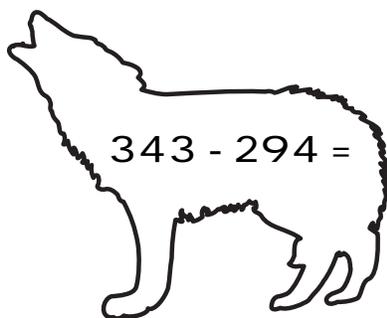
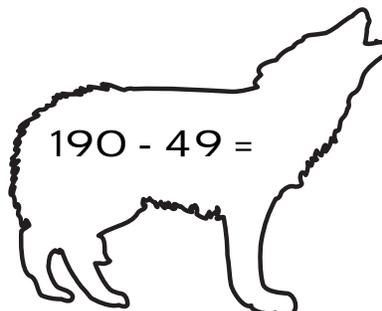
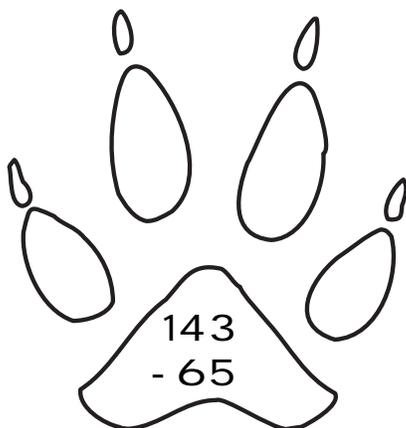
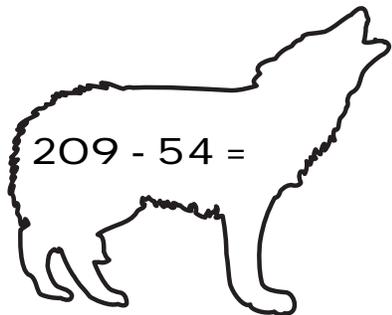


# WOLF MATH

## SUBTRACTION

### Directions:

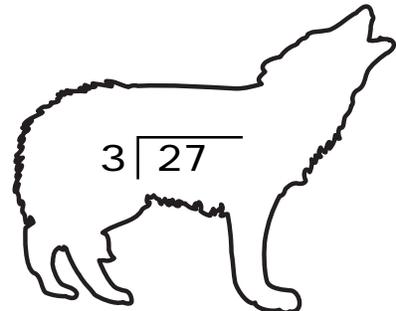
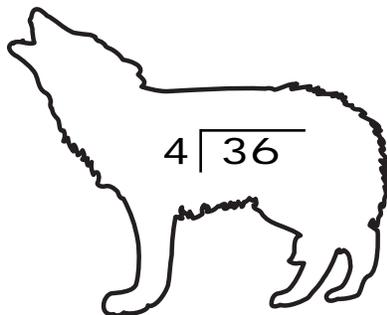
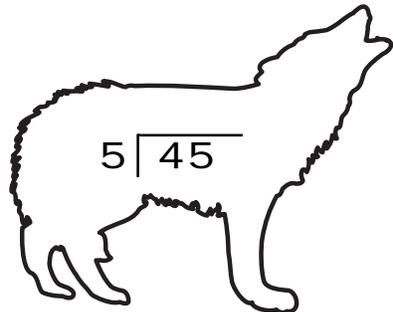
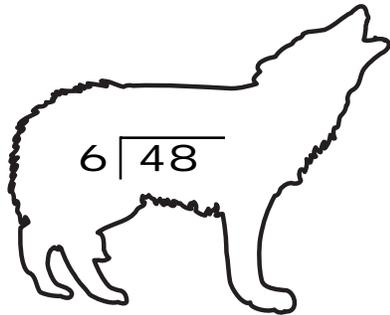
Please show your work on a separate sheet of paper if there is not enough space available.



# WOLF MATH DIVISION

## Directions:

Please show your work on a separate sheet of paper if there is not enough space available.

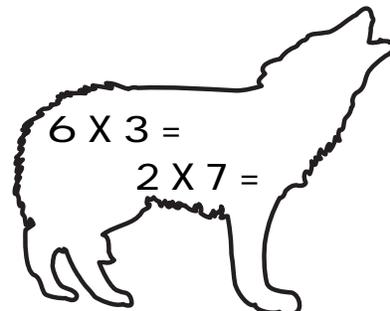
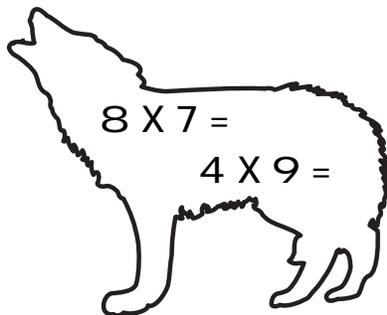
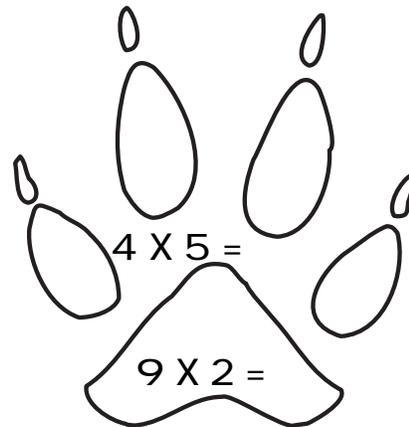
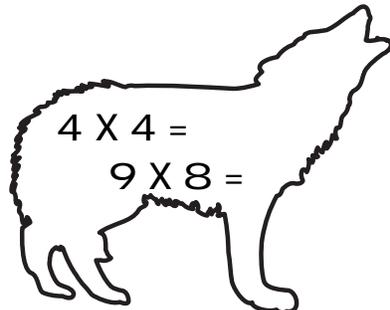
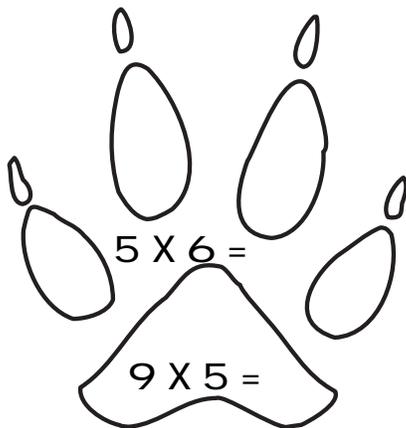
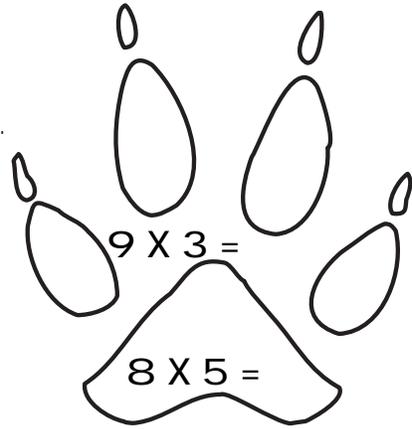
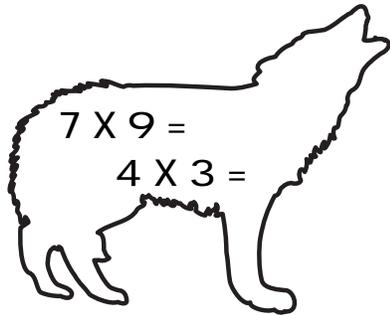


# WOLF MATH

## MULTIPLICATION

### Directions:

Please show your work on a separate sheet of paper if there is not enough space available.

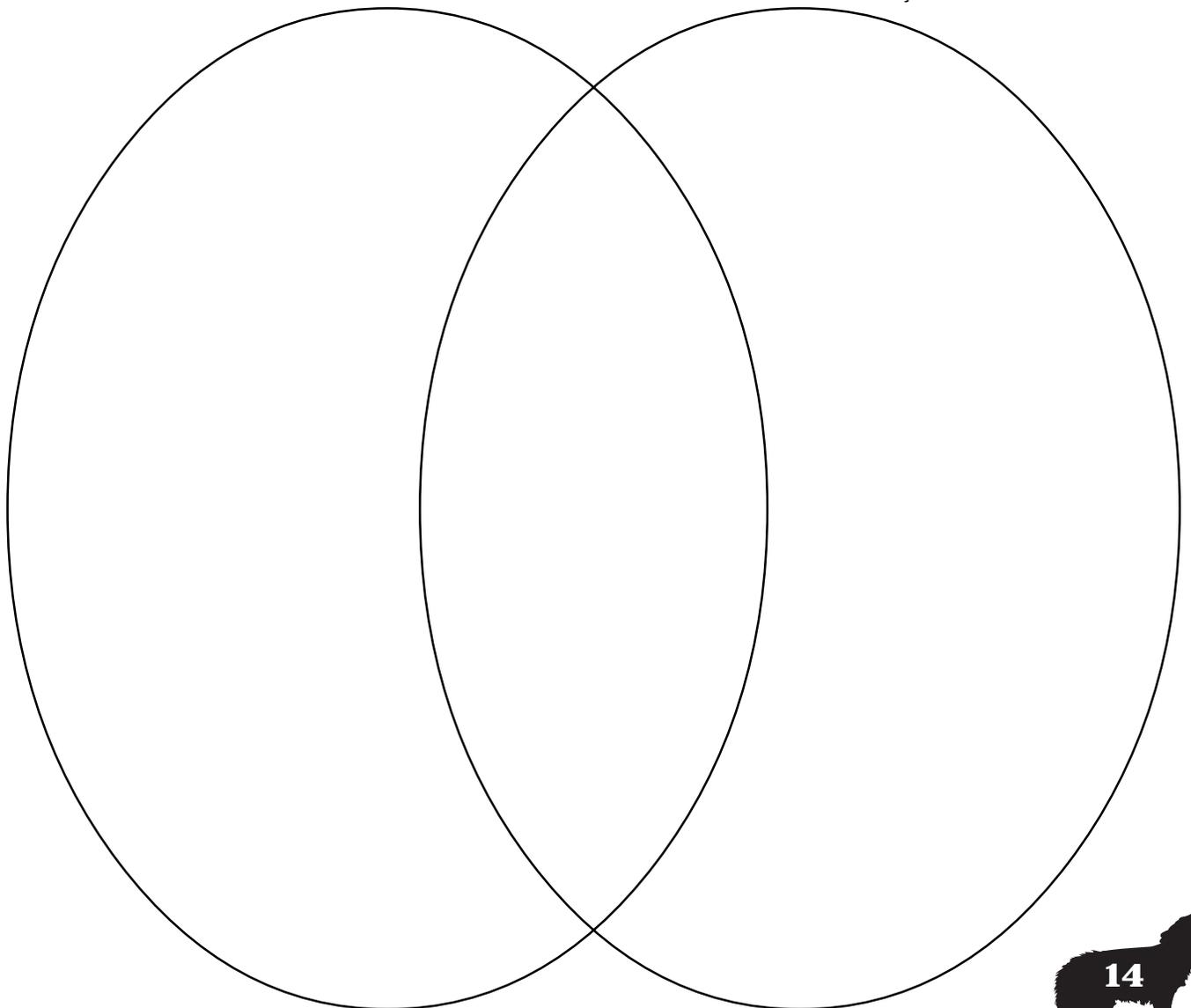


# WHAT ARE OUR SIMILARITIES AND DIFFERENCES ?

Wolves and humans have similarities and differences in personality, appearance, and behavior. There are also some similarities and differences between wolf pack behavior and human family behavior. Write down all the things you know about wolf personality, appearance, behavior, and communication. Do the same for humans. In the section where both overlap list the things that are much the same for both wolves and humans.

**WOLVES**

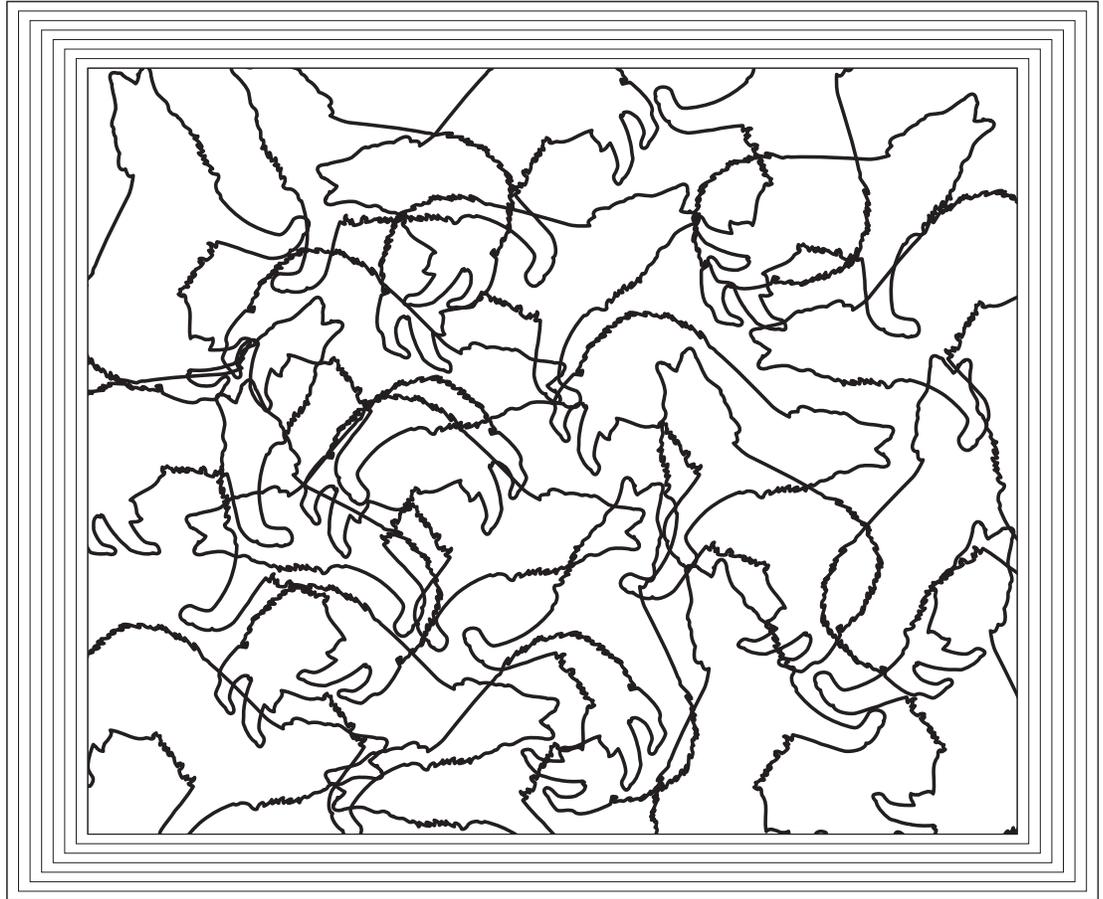
**HUMANS**



# HOW MANY DO YOU SEE?

## **DIRECTIONS:**

Count how many completed wolves you can spot in this square. Make sure to count those wolves that overlap.



**TOTAL NUMBER OF WOLVES:**



# PROBLEM SOLVING FOR THE WOLVES

1. Wolves commonly travel 20 miles in 24 hours.  
How many miles would a wolf travel in 7 days?  

---
2. The distance between Dirty Face Mountain and Mt. Baker is 80 miles.  
A wolf can travel 20 miles a day. If a wolf left Dirty Face Mountain on Friday, on what day would he reach Mt. Baker?  

---
3. Throughout the night you heard a pack of wolves howling. This particular pack howls every 20 minutes. You heard 7 separate howls from the same pack. How much time passed as you were listening?  

---
4. During a research period, biologists recorded seeing 60 wolves. Within two months 49 of the wolves were killed by illegal hunters. What was the percentage killed by illegal hunters? You may use a calculator after your teacher has explained percentages to you.  

---
5. What was the percentage of wolves that survived?  

---
6. If a wolf traveled only 15 miles a day, how many days would it take to go 90 miles?  

---
7. Several packs of wolves were studied by biologists to determine how successful they were as hunters. Moose were seen by wolves 131 times and only 6 times were moose actually killed. What percentage of these encounters resulted in successful hunt by wolves?  

---



# WOLVES: TRUE OR FALSE

## Directions:

Read the statements below. If the statement is true, place a "T" in the box. If the statement is false, place a "F" in the box and rewrite the statement to make it true.

1.  The habitat of the wolf may influence the color of its fur.
2.  The wolf can smell and hear prey a long distance away.
3.  Wolves live in a pack. A pack is like a family with a mother, father, several pups and close relatives.
4.  Wolves are plantigrade animals. (look up plantigrade in the glossary)
5.  Wolves on an average have a larger footprint than do dogs or coyotes.
6.  Lone wolves are more apt to respond to a howl from a pack.
7.  Wolves and dogs are related.
8.  Wolves communicate by howling, barking, whimpering, and growling.
9.  Wolves have four toes on the front paws and five on the back paws.
10.  Wolves' tails have a curl to them.
11.  The muzzle of the wolf is large and blocky.
12.  Wolves include ungulate animals in their diet. (look up ungulate in the glossary)
13.  Scat is the name used for wolf droppings.
14.  One function of howling is to identify distance between packs.
15.  Wolves can howl for an hour without stopping.
16.  All wolves are protected in the lower 48 states by the Endangered Species Act.





# WOLVES

## TEACHER INFORMATION



# WOLF STORY

## EARLY SPRING

It was March the year she mated for the first time. She was six years old and had become the alpha female of the pack the previous autumn. The former alpha female had been killed by bounty hunters. The new female leader had mated with the alpha male, who was the pack leader. There were seven wolves in their pack, including the beta female, several yearlings, and other wolves between the ages of two and eight.

About halfway through her sixty-three day gestation period she began digging her den. She found an ideal site, on top of a hill with a stream running into a small valley below. She dug into the sandy soil underneath a large rock outcropping. From here she could see, hear, and smell any danger that might appear.

When she realized she was close to giving birth, she retreated alone into her den. She had five pups that first year. They were born blind, helpless, and covered with short dark fur. For the first five days she never left the den and the pups ate frequently. When the mother felt the need to eat, she would go to the den entrance and eat food left there for her by the other pack members.

After the fifth day, she began to leave her pups in the den by themselves for short periods of time. She went out to eat, drink, relieve herself, and visit with the other pack members. She didn't allow any other wolf near the pups.

When the pups were about twelve days old their eyes finally opened. Now they were able to get around in their den more easily. At three weeks the mother started bringing them out of the den. They stayed close to the den entrance the first few times. There they met other members of the pack, who greeted them with gentle sniffs and licks. As the pups grew they spent more time out of the den wrestling and playing with the other pack members. When the rest of the pack was away hunting, at least one adult, usually the mother or the beta female, remained behind to "pup-sit."



When the pups first came out of the den, they began to eat solid food. In addition to nursing, they were becoming accustomed to eating regurgitated meat, brought back to them by the adults who had been out hunting. By the time the pups were six weeks old, their mother was weaning them. They had to depend on the pack members to supply all their food. To receive food the pups acted submissive and licked the mouths of the adult wolves. The licking caused the adults to regurgitate the partially digested meat, which the pups eagerly gobbled up.

After weaning, the pups began maturing. They practiced their hunting skills by playing tug of war and other games with bones, sticks, and pieces of hide. They also stalked insects and rodents, sometimes actually killing one. They tirelessly practiced sneak attacks on each other and resting adults. All the adults were patient with the pups, and occasionally demanded puppy submission if the play became tiresome.



## **SUMMER**

**W**hen the pups were about nine weeks old, the pack abandoned the denning site. The wolves moved toward the first of many rendezvous sites they would use that summer. At the rendezvous sites pups learned many things. While the rest of the pack went on a hunt, the pups and an adult or two waited for their return. Time was spent sleeping and playing. If the kill was nearby the pack brought food back for the pups and their caretakers. If the kill was a large one, some distance away, the pack traveled to a new rendezvous site closer to the carcass. There the pups had their first experience of tearing their own meat from the kill— after all the adults had eaten.

It is also at the rendezvous sites that the pups practiced their howling. Howling was usually started by the alpha male. Then others in the pack joined in, rose, stretched, howled, and got ready for the night's hunt. The pups blended their high voices with those of the adults.

Whenever a kill was made, the pack ate and rested until the carcass was gone. Ravens and other scavengers hover nearby, waiting to pick up the scraps. Some years game was scarce, and the wolf pack might go a week or more without eating. When this happened, the scavengers also had a tough time finding enough food. This year however, there was plenty of game, so many of the hunts were successful, and the pack ate well.



## WINTER

**B**y early winter, the pups were nearly as tall as they would get. They reached their full height at about ten months, and filled out with muscle during the following year. They started going on hunts with the pack that winter.

There was a lot to learn, but the other pack members were patient in teaching them successful hunting techniques. As always, when a kill was made, the dominant pair ate first, while other pack members waited their turn.

During the pups first winter the snow fell often. The wolves had very little trouble traveling in the snow. The leader broke trail, with the others following in his tracks. When the leader tired, another wolf took over the trail breaking duties.

The ungulates, on the other hand, had a much harder time getting around in the snow. Their heavy bodies and small sharp feet caused them to plunge through the soft snow, and they found it tiring to try to move far. The wolves had the advantage with their large feet and well-packed trails, and they ate well that winter.

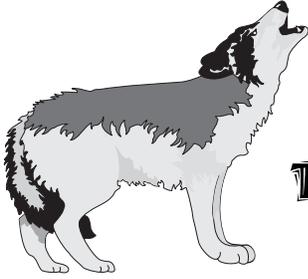
The pups' first winter had been a good one. Not all winters would treat the pack so kindly. Every year, the pack lost at least one, either to hunters, trappers, sickness caused by parasites, or old age and weakness. Lack of prey in the winter also caused death— pups or very old wolves died from starvation.

## EARLY SPRING

**T**he next spring, the alpha pair would mate again, and a new batch of pups would be born. If food had been scarce during the winter, the pair might not mate, or if they did mate, she might not become pregnant. Rarely did any other wolves in the pack mate with each other, even though they might be old enough to breed. But no matter which wolf the pups belonged to, the whole pack helped with the responsibilities of raising them.

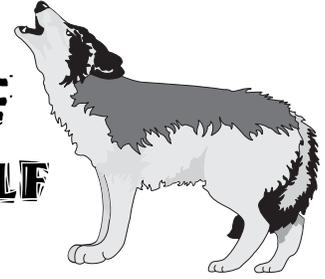
The pack would survive if it was left alone and not hunted or harassed by humans. The pack would survive if sufficient food, water, and protected areas remained available in its range.





# OUR LIFE CYCLE

## THE LIFE CYCLE OF A WOLF



### ALPHA PAIR

This pair are the leaders of the pack. The pair make the decisions on where and when to hunt and where to rest. These two also prevent others in the pack from mating and are usually the only ones to have pups.

### BETA FEMALE AND MALE

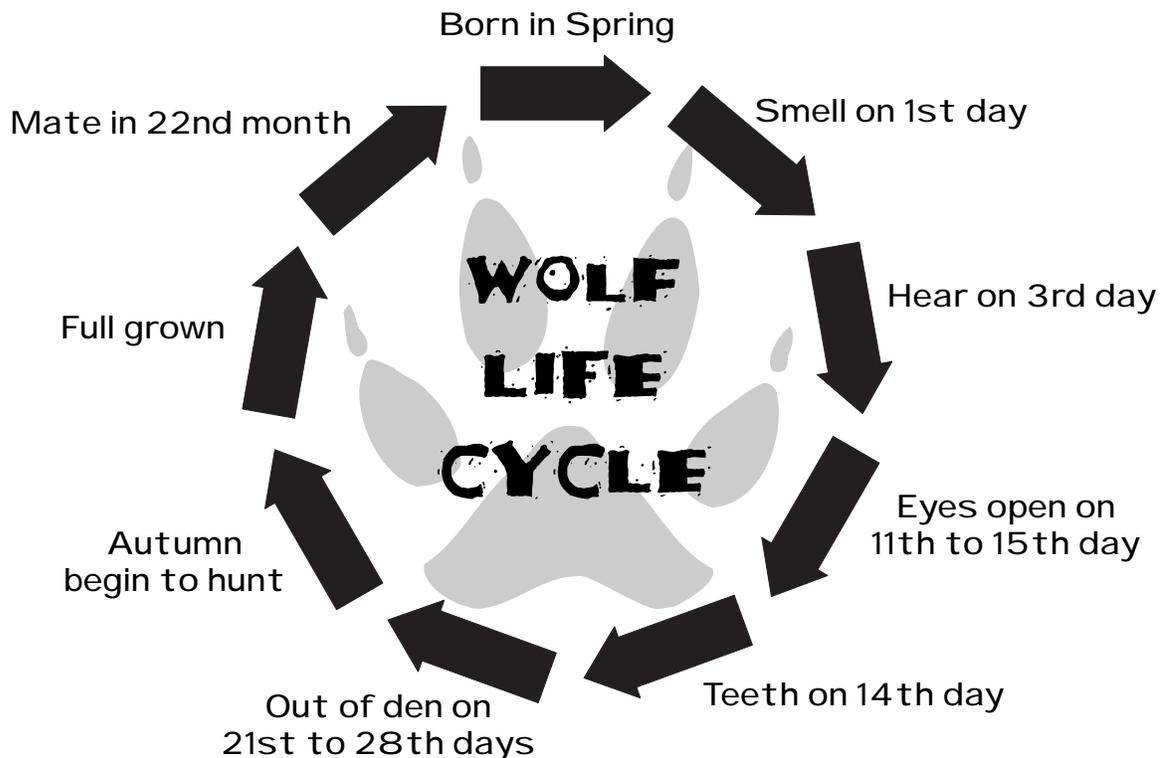
This is the second ranking pair who obey the decisions made by the alpha pair. They help with the rearing of the pups.

### YEARLINGS

These are wolves that are last years pups and are continuing to strengthen their survival skills, in order to live on their own.

### SCAPEGOAT

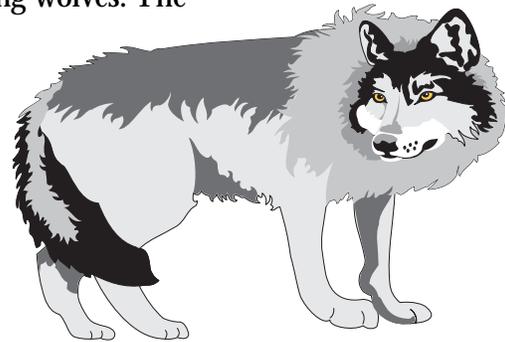
This is the lowest ranking position in the pack. This wolf is often blamed for misfortunes in the pack. This wolf is very submissive to others in the pack.



## **WOLF POPULATION PRIOR TO 1600**

Populations of wolves in North America began to diminish rapidly as settlers from Europe moved west. Beginning with settlements in Virginia and the New England States, settlers killed wolves to protect their domestic livestock. The Eastern Timber Wolf population was nearly eliminated by 1776. In the southern states, the red wolf met the same fate as settlement occurred in Tennessee, Georgia, Alabama, Mississippi, and Texas.

In 1805 the Lewis and Clark Expedition reported seeing many wolves in their travels west. The Great Plains wolves' (*Canis lupus nubilus*) were frequently observed by the explorers. These were the buffalo hunting wolves. The Great Plain wolves lives were threatened as Westward Expansion began. Trappers and hunters routinely killed the animals for their furs. They saw the wolf as a competitor in the hunt for other valuable furred animals. Settlers in the Great Plains feared wolves and killed them to protect domestic livestock. Bounty hunters killed tens of thousands of wolves all over the west.



In 1915 the U.S. government passed a law providing for the extermination of wolves on all government owned land. Hunters benefited greatly from this law. Bounty hunters were hired by the U.S. Government to shoot, poison, or trap all wolves on federal land.

## **PRESENT WOLF POPULATION**

Wolves once roamed freely over most of North American above 30 degree N. latitude. Now there are only a few places where wolves remain. The Endangered Species Act was passed in 1975 to protect animals such as wolves, who are nearing extinction.

Currently there are large populations of wolves in Alaska and Canada. Hunting wolves in those two areas is still popular and even sanctioned by government agencies. About 1,000 wolves exist in the woodlands of N.E. Minnesota. Michigan's remote upper peninsula still has a small population of wolves. On Isle Royale in Lake Superior approximately 30 wolves still exist. In the Northwestern corner of the United States a few wolves remain in Glacier National Park. Wolves are also appearing in the remote northern mountain regions of Washington and Idaho. These wolves are moving down from Canadian packs in the provinces of British Columbia, and Alberta.



# WOLF POPULATION



**GRAY WOLVES**



**RED WOLVES**

**PRIOR TO 1600**



**PRESENT**



# FACT SHEETS FOR WOLVES AND CLOSE RELATIVES

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## TIMBER WOLF

Canis lupus

- \* Seldom kill in anger
- \* Usually mate for life
- \* Treat youngsters with kindness, affection and humor
  - \* Adopt orphaned pups and treat like own
- \* Found all over the world: from equator to Arctic
  - \* weigh up to 150 pounds
    - \* 3 feet high
    - \* 6 feet long
  - \* Females are usually smaller
- \* Coloring is a mixture of white, gray, and black
- \* Travel 15 - 20 square miles for food in summer and double that in the winter
  - \* Feed on anything from mice to moose
  - \* Have very strong sense of smell and sight
    - \* Very intelligent
- \* Communicate through whines, snarls, yelps, barks, whimpers, and howls
  - \* Can communicate in high pitches

See maps for the location of wolves  
and close relatives on page 12 through 14



# COYOTE

*Canis latrans*

- \* Small relatives of the wolf
- \* Also known as the "brush wolf" or "prairie wolf"
- \* *Canis latrans* means - barking dog
  
- \* Appearance:
  - 4 ft. long
  - 18 - 20 inch high
  - weigh up to 50 pounds
  - larger ears than wolf and are erected
  - fur is reddish with rusty feet, legs, and ears
  
- \* Very fast can run 40 miles an hour
  
- \* Predators include: wolves, cougars, golden eagles and the most dangerous, Man.
  
- \* Babies:
  - 5- 7 babies in a litter
  - born in April, May, or June
  - born with fur but blind
  - weaned in two weeks
  - 6 weeks on their own
- father coyote stays outside den for several weeks, only job is to bring food
  
- \* Mate for life
  
- \* Seldom run in packs, but hunt in pairs or family group
  
- \* Many tricks used in catching prey
  - play dead
  - Hunting with badgers
  
- \* Communicate with family, neighbors, and for fun
- \* Tracks in straight line



# RED WOLF

Canis niger

- \* Found in the southwest, including east of Texas, west Louisiana, and Oklahoma
- \* Grayish in color with red overtones
- \* Weigh 40 - 80 pounds
- \* 2 feet to 30 inches high
- \* Frequently mistaken for a coyote

# MEXICAN GRAY WOLF

Canis lupus baileyi

- \* Found in the southwest, including eastern Arizona, western New Mexico, Texas and through central Mexico
- Very seldom solid in color, but tend to be a mix of grays and reds
  - Weigh up to a 100 pounds
- females are usually smaller at 60 - 90 pounds
- 2½ feet high and 5½ feet long
- Feed on anything from mice to mule deer
- Usually mate for life



# DINGO:

Canis dingo

\* Found in Australia

\* Appearance:

- 3 to 4 ft. long

- weigh up to 45 pounds

- fur usually light tan, or reddish

- usually lighter underneath

- fur is soft and medium length, but can be coarse

\* Live in flat areas, temperatures reach 120 degrees

\* Mate for life

\* Run in packs, when hunting

\* Hunting is well planned and very successful

\* Kill much more than they can eat

\* Predators of the young pups include: eagles, snakes, and Man.

\* Migrate every change of season from high, cold areas to warmer areas

\* Babies:

- 5 in a litter

- leave parents in the fall



# JACKALS

\* A number of different kinds of Jackals:

- black-backed (South Africa)

- wolf-like (Egypt)

- side-striped (Africa)

- Indian jackal (Palestine and Arabia)

Azara (South America)

Ecuadorian wild dog (Andes of Ecuador)

round-eared dog (upper Amazon)

Chilean wild dog (Chile)

\* all look like small wolves or foxes

\* Hunt alone, in pairs, or packs

\* Hunt at night

\*Babies:

- 4 in litter

- born blind



# LOCATION MAPS OF WOLVES AND CLOSE RELATIVES

## TIMBER WOLF



## MEXICAN WOLF



# LOCATION MAPS OF WOLVES AND CLOSE RELATIVES

## RED WOLF



## COYOTE



# LOCATION MAPS OF WOLVES AND CLOSE RELATIVES

## JACKAL



## DINGO



# WOLVES IN MYTHOLOGY

## GREEK

The stories of werewolves (humans who turn into wolves at night) were thought to have originated in Europe hundreds of years ago. However, the idea of werewolves may go back even farther than that — to Ancient Greece. The following is a Greek Myth which is similar to later werewolf stories.

The great Greek God Zeus went to Earth disguised as a worker one day. On Earth was a man named Lycaon who worshipped Zeus properly. However, his sons were not so respectful of Zeus. Zeus went to check on the sons' behavior. He found they were being arrogant, boastful, rude, and disrespectful to their father. In addition, they were not worshipping properly.

Lycaon welcomed Zeus, (who was in human form) and planned to serve him a meal. Lycaon's sons convinced him to serve Zeus a meal that contained human flesh to see if the visitor was really Zeus in disguise. One of the sons was killed and his flesh mixed in with goat and lamb meat. Zeus knew immediately that there was human flesh in the stew. He was furious !

Zeus changed Lycaon and the remaining sons into wolves, and then restored the life of the son that had been killed. Then Zeus caused a great flood which drowned all men except for Deucalion, a wise and pious man who built an ark. Some other Greeks escaped the flood because they awoke in the middle of the rains to the sound of wolves' howling. The wolves then led the other Greeks to higher ground.

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Lycaon's name has been preserved in the scientific name for the Eastern Timber Wolf — *Canis lupus lycaon*.

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The word Lycanthropy is another modern word that comes from the Greek myth. Lycanthropy is a state of mind in which a person believes himself to be a wolf in human form (a werewolf).

# NATIVE AMERICANS AND WOLVES

## Plains Indians

**Cheyenne** (N. Dakota, S. Dakota)

**Pawnee** (Nebraska, Kansas)

**Sioux** (Minnesota, N. Dakota, S. Dakota)

- ❖ The wolf was an esteemed and honored “medicine” animal.
- ❖ Tribes believed that what made the wolf stronger made the pack stronger, therefore what made the hunter stronger in their tribe, also made the tribe stronger.
- ❖ These tribes used parts of the wolf as ceremonial items, and as symbols of strength.
- ❖ Pawnee were known as the “Wolf People.” Their sign language for their tribe was the same as the sign for “wolf.”
- ❖ The Pawnee wore wolf skins at times, both for hunting and special ceremonies.
- ❖ Pawnee called the Wolf Star (Sirius—also known as the Dog Star) or the “Red Star of Death.” The Milky Way was called “The Wolf Road.”
- ❖ To the Pawnee, the wolf was a symbol of renewal, as was the willow tree.
- ❖ The Cheyenne wrapped wolf fur around sacred arrows and used it to attract curious antelope.
- ❖ The Cheyenne had a special group of warrior/hunters called the “Wolf Soldiers.” This group was formed around the early 1800’s. They believed they were invincible in battle.



## Shoshoni — Wyoming

- ❖ The Shoshoni observed that wolves laid low on the prairie, and wagged just the tip of their tail above the prairie grass. The purpose was to attract the curious antelope close enough for a successful kill. The Shoshoni imitated this technique by tying a piece of hide to a stick or arrow, which waved above the grass as they laid flat. This attracted the antelopes close enough for a successful arrow shot.



## **Navajo — New Mexico**

🐾 The Navajo tribe feared wolves as human witches in wolves' clothing. This belief was similar to the "werewolf" tales that were prevalent in Europe.

🐾 Navajos used the gall from a dead wolf as a powerful protective medicine.



## **Cree — Alberta, Canada**

🐾 This tribe imitated the wolves' hunting technique by maneuvering ungulates onto slippery lake ice in winter. This caused the animals to slip and fall, and made them much easier to catch and kill.



## **Nunamiut — Brooks Range, Alaska**

🐾 Members of the Nunamiut tribe, especially hunters, identified closely with wolves as fellow hunters. The hunters did not hunt when the weather was bad, neither did the wolves.

🐾 Tribal members liked to play, as did the wolves.

🐾 All members of the tribe benefited from a successful hunt, children and old alike, just like in a wolf pack.



## **Makah, Quillayute, Nootka, Kwakiutl — Pacific Northwest Coastal**

🐾 Each of these tribes celebrated a wolf ritual at the beginning of winter just before a full moon. The wolf ritual was used as an initiation ceremony to welcome young people into the tribe.

🐾 In the Kwakiutl tribe, when a wolf was killed, a ceremony was held in which each of the hunters would eat four small pieces of meat. Then the rest of the wolf carcass was buried, and members would call the wolf their good friend.



## **Cherokee**

— **Tennessee, N. Carolina, S. Carolina**

- 🐾 The Cherokee believed that to kill a wolf would bring trouble to the whole tribe.



## **Pueblo — Arizona**

- 🐾 Both Pueblo Indians and the wolves hunted deer by running them to exhaustion. This took the tribal members several days in some cases. The wolves succeeded much more quickly.



## **Wolf Art**

Pacific Northwest Coastal Indians

# INDIAN LEGENDS

The coyote, another member of the dog family played a very important role in Native American Legends. Coyotes lived all over North America, and were known to all the Indian tribes. There are very few recorded Indian legends dealing with the wolf, but hundreds of legends about the Coyote.

The Pawnee tribes of what is now Nebraska and Kansas, held the wolf in high regard, and even called themselves the “Wolf People”. Their creation legend deals with the wolf.

## **PAWNEE CREATION LEGEND**

All the animals were invited to a council, except the Wolf Star, who was the brightest star in the southern sky. He watched from above, getting more and more angry as he saw the council decide how to make the Earth. The Storm That Comes Out of the West was told to go around the Earth with a bag containing the People. Storm was to stop every night, let the People out of the bag to camp and hunt buffalo. Wolf Star sent a gray wolf down to Earth to follow Storm around. When Storm fell asleep, the wolf stole his whirlwind bag, thinking it was full of food. He ran far away with the bag. When he opened up the bag, all the People ran out and set up camp. But soon they realized that there were no buffalo there to hunt. They discovered it was Wolf that had opened the bag. They were very angry and chased Wolf, finally catching him and killing him.

When Storm finally found the People, he was sad at what they had done. He told them that by killing Wolf they had brought Death to the world, which Storm had never intended to do. He told them to skin the Wolf and make a sacred bundle. In the bundle they were to place the things that would forever remind them of what they had done. From that time on they would be known as the “Wolf People” or Skidi Pawnee.

The Wolf Star (Sirius) watched all this. The Pawnee called the star “Fools the Wolves” because it rises just before the Morning Star and tricks the wolves into howling just before first light. This is how the Wolf Star still reminds the People that he was left out when Earth was created.



# CHINOOK INDIAN LEGEND

## (COLUMBIA RIVER)

Although, the Coyote is an important figure in Indian legends, he rarely appears in the same story with both the Wolf and the Bear. This legend explains how both Sirius (the Dog Star constellation) and Ursa Major (the Great Bear) appeared in the sky.

**C**oyote (the Trickster) was out hunting in the field one night when he came upon a group of five wolves sitting with their dog. The wolves and the dog were all looking at the sky. Coyote looked up but could see nothing. He politely asked them what they were looking at. They rudely replied, "None of your business." Coyote was persistent in asking them to tell him what they were gazing at. Finally one of the Wolf brothers said, "If you must know, we see a Bear up there in the sky and we are watching it."

Coyote looked up, and sure enough, he could see the outline of a large Bear in the sky. He said, "Maybe we should all go up and take a closer look at that Bear."

At this the Wolf brothers and their dog all laughed, and made fun of Coyote. "How are we going to do that?" they howled.

"I will shoot my arrow at the Bear," replied the Coyote. He then shot first one arrow at the Bear, then another and another. After shooting many arrows, each one into the end of the previous one, there was a long chain of arrows reaching down to Earth where the Wolf brothers, the dog, and Coyote stood.

"Now we can climb up the arrows and get a closer look at the Bear," Coyote told the others. Coyote led, and soon all the animals had climbed into the sky. The Wolf brothers and their dog all sat down at various points around the Bear and began to watch him. "Don't get too close to that grizzly bear," warned Coyote, "You might make him angry."

Coyote stood a little farther off to watch. He thought the Wolf brothers, and their dog made a very nice sky picture. He decided that if he left them up there all the People on Earth would thank him for creating such a pleasing picture in the sky. So quietly and slowly, Coyote climbed down the rope of arrows, removing each one until he again reached Earth.

Since that day the Wolf brothers and their dog still sit quietly in the sky watching the Great Bear.



# **CHECK YOUR WOLF COMMUNICATION SKILLS**

**Role playing:** choose one or two students for each situation. Students are to act out the body language a wolf or pack of wolves. The other students are to observe and take field notes in their student workbook. After the last activity, discuss the results of each situation. Be sure to have students refer to the "Wolf Body Language" handout in workbook.

1. I am the alpha male who is directing the pack to a location for resting after a hunt.

**Stands up, sniffs, stretches, begins a howl, after group howl, he walks off.**

2. I am trying to eat part of a carcass; when a higher ranking wolf comes in and challenges me for my position.

**Head goes down, lips come up in smile, tail goes down between legs, eye contact avoided.**

3. I am a lone wolf who has wandered into a pack's territory.

**Submissive behavior, the "don't hurt me," keeps distance.**

4. I am a pup who wants to be the leader someday. How would I portray that within the litter?

**Tries to get other pups to play, stands over other pups acts aggressive with littermates, displays curiosity.**

5. I want to play, what do I have to do?

**The play bow, yips, tail wagging**

6. I hear a noise coming from the far distance. How would I behave and communicate this noise to other pack members?

**Ears alert, head up, begin to howl**

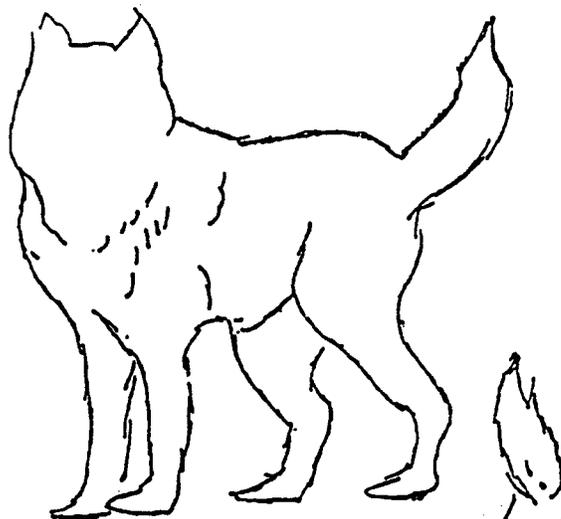


# WOLF

## BODY LANGUAGE

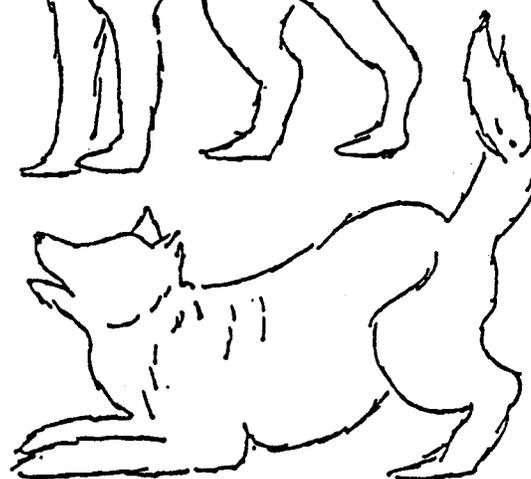
### ALPHA BEHAVIOR

- 🐾 Tail held high and bushed out
- 🐾 Head held high
- 🐾 Fur coat puffed to look even larger
- 🐾 Ears pointed forward
- 🐾 A relaxed body posture
- 🐾 An assertive pose



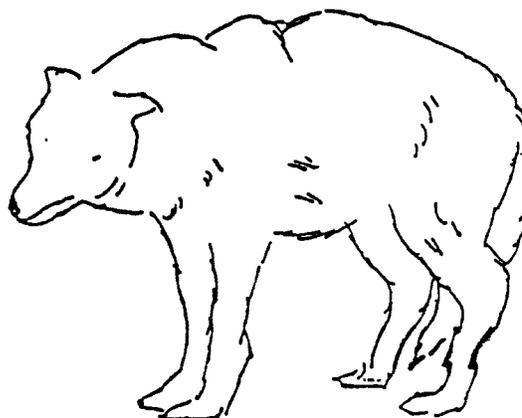
### PLAYING POSITION

- 🐾 Tail wagging
- 🐾 Ears pointed forward
- 🐾 Face relaxed and almost smiling
- 🐾 Hind end up in air



### SUBMISSIVE BEHAVIOR

- 🐾 Tail flat tened
- 🐾 Tail may be held between legs
- 🐾 Head held low to the ground
- 🐾 Ears lowered and flattened to head
- 🐾 Eye contact with other wolves avoided



### DON'T HURT ME

- 🐾 Wolf rolls over on back and exposes its belly
- 🐾 Tail held between back legs
- 🐾 Head held down
- 🐾 Mouth closed and tense
- 🐾 Ears held back and down
- 🐾 Eye contact with another wolf is avoided



# WOLVES

## TEACHER'S ANSWER KEY AND IDEAS FOR EXTENDED ACTIVITIES

### **page 1, student workbook: Knowledge Check**

Extended Activity: Use a large sheet of butcher paper tacked up in a visible section of your classroom. Do this activity as a class “brainstorming” activity. Write down everything you and the children know, even if you may think it is false. At the end of the unit, tack up another piece of butcher paper and brainstorm what the class knows now, your second list will be much longer and all accurate. Leave the first list up thoroughly the unit, cross out statements you discovered to be false.

### **page 1-3, teacher info: Wolf story**

🐾 May want to have the students read this out loud as a class. This will give you the opportunity to add to the information.

Extended Activity: Have the students create their own book by using the information from the “Wolf Story” and drawing their own illustrations.

### **page 2, student workbook: Are They Facts or Fiction?**

🐾 Make sure sentences are complete

🐾 Have the students really investigate by using a wide variety of resources.

### **page 4, teacher info: Our Life**

Extended Activity: Create a human life cycle and compare to the wolves. What are the similarities and differences.

### **page 5-6, teacher info: Population Distribution of Wolves**

🐾 Discuss reasons why the population has diminished

🐾 How does this effect the food chain

Extended Activity: Have the students write how they feel about the diminishing population. What could be done to increase populations and how will that effect the food chain.

Extended Activity: Using another wall map of North America, compare to identify natural features, boundaries, and other details. It might be helpful to blow up the maps in this book, make a transparency and make an overlay to compare



## **page 7-14, teacher info: fact sheets for wolves and close relatives and maps**

 Create a bulletin board matching activity with maps and fact sheets of each animal

Extended Activity: Have students mark on a blank world map all the other areas where wolves are found. They should do this as they find the information in their research. Areas may include and are not limited to: Pyrenees, Northern Italy, Russia, Siberia, and Northern Scandinavian countries.

## **page 3, student workbook: Wolf Prints**

 Discuss with the whole class the similarities and differences of wolves and coyote foot prints.

 Note the distinguishing characteristics

## **page 15, teacher info: Wolves in Mythology**

 Make sure to explain the differences between legends and myths compared to reality.

## **page 5, student workbook: Wolves in Legends and Stories**

Before Activity: As a class, brainstorm and discuss what negative and positive personality traits are. List them on the board in two columns. Leave the list up while students work on this assignment. Read a piece of literature to the class in which the animal character exemplifies a positive or negative personality trait. After reading, ask students to identify the personality traits of the character. This will give the whole group an example of what they are to do with the characters in the story they choose.

 This activity is up to the students. Make sure they refer to pages which support their opinion. The sentences also need to be complete.

 Make sure to explain the differences between legends and myths compared to reality.

Extended Activity: The students have the opportunity to create their own legend about the wolf. Legend starts: the purpose of the 5 toes on the front feet and 4 on the hind feet, reason behind the diminishing numbers in the lower 48, how the wolves first created their communication network (howling, whimpering, barking) ..... no limitations.



## **page 16-18, teacher info: Wolves and Native American Tribes**

 Have the students cut-out the Native American Tribes and arrange them to match-up to the states. Do this project on a larger piece of paper.

 Make this a class discussion. Compare and contrast the tribes and their beliefs of the wolf. Compare with the students' own beliefs.

 It might be helpful to enlarge this map and make a transparency. Then have the same map available as an overlay showing natural features, borders, and cities.

Extended Activity: Have the students pair up and research the tribe of their choice. See what other information the students can find about the beliefs of the tribe members.

## **page 19-20, teacher info: Chinook Indian Legend and Indian Legends**

 Make sure to explain the differences between legends and myths compared to reality.

Extended Activity: The students create a picture of what the sky looks like with the Wolf brothers and their dog, watching the Great Bear.

Extended Activity: The students have the choice to recreate one of the legends in a poem format or in a series of pictures.

## **page 21-22, teacher info: communication skills - Field Notes** **\*\*use page 22 as a guide and page 6 of student workbook\*\***

 Combine with teacher activity page 37: Check your wolf communication skills. Directions on page 37 of the teacher's packet.

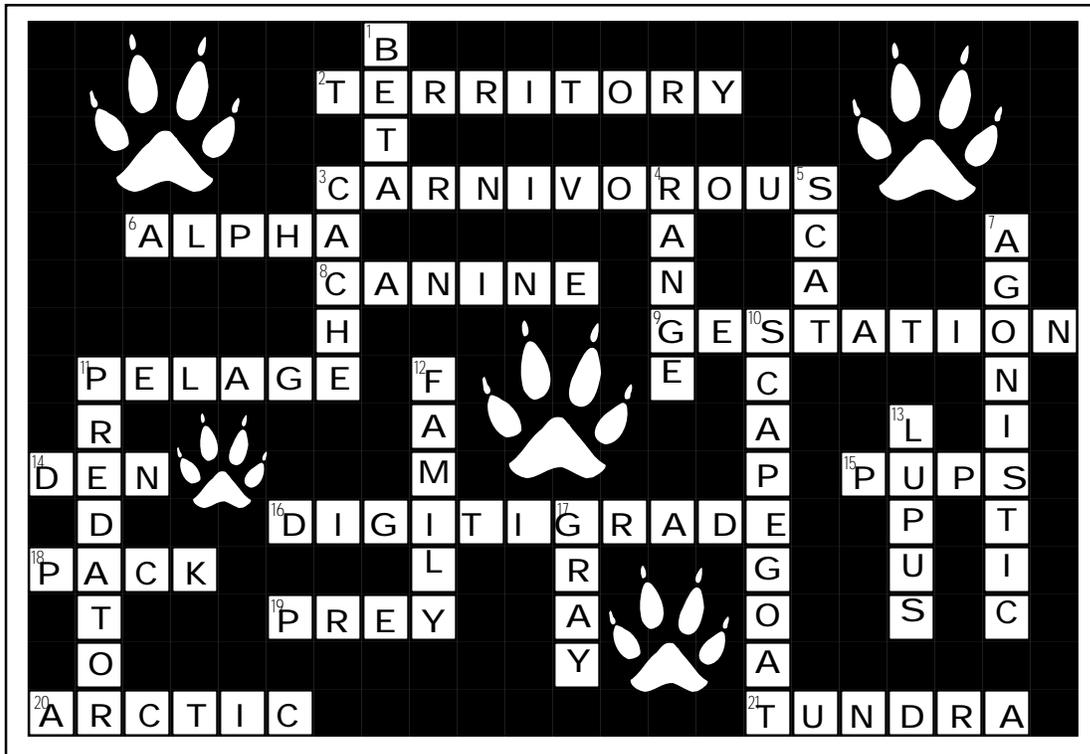
 This is a great activity for the whole class to be involved in.

## **page 8, student workbook: Wolf and Grizzly Jaw Structure**

 May want to go through the activity as whole class to discuss interesting facts.



**page 9, student workbook: Wolf Crossword**



**page 10, student workbook: Math Addition**

1. 252
2. 176
3. 223
4. 221
5. 188
6. 909
7. 215
8. 246

**page 11, student workbook: Math Subtraction**

1. 155
2. 78
3. 141
4. 36
- 5 a. 78 b. 36
- 6 a. 152 b. 240
- 7 a. 49 b. 316
- 8 a. 10 b. 31



## **page 12, student workbook: Math Multiplication**

1 a. 63 b. 12

2 a. 27 b. 40

3 a. 30 b. 45

4 a. 16 b. 72

5 a. 56 b. 36

6 a. 20 b. 18

7 a. 28 b. 42

8 a. 18 b. 14

## **page 13, student workbook: Math Division**

1. 6    2. 6    3. 9    4. 9    5. 9    6. 9    7. 5    8. 6

## **page 14, student workbook: Similarities and Differences Wolf and Human**

\*This activity is called a Venn's Diagram. Use this only as a guideline when assisting the students in completing their diagram. Students will come up with more details than are listed here. It may be helpful to do a small part of this diagram on the overhead or the chalkboard as a group activity.

Examples of some details you may list in the Venn's Diagram:

wolf: digitigrade walker, covered with thick fur, 2 month gestation period, blind at birth

human: plantigrade walker, 9 month gestation period, very little body hair, eyes open at birth

wolf and human: father and mother help raise young, member of a family system, use body language and vocalization to communicate language

## **page 16, student workbook: Problem Solving for the Wolves**

1.  $20 \times 7 = 140$  miles in seven days

2.  $20 / 80 = 4$  days if left on Friday will reach Mt. Baker on Tuesday

3.  $20 \text{ min.} \times 7 \text{ times of howling} = 140 \text{ minutes}$  or 2 hours and 20 minutes

4. 80% were killed by illegal hunters

5. number percent that survived was 20%

6.  $15/90 = 6$  days

7. 5 % success rate

## **page 15, student workbook: How Many Do You See?**

Total number: We have no idea!



## page 17, student workbook: Wolves True or False

\* Encourage students to use any resources to determine the best answer.

1. T
2. F can smell prey over a mile away vision is not as accurate.
3. T
4. F wolves are digitigrade animals
5. T
6. T
7. T
8. T
9. F five on front four on hind
10. F. wolves tails are straight
11. T
12. T
13. T
14. T
15. F howl and then will again in  
20 minutes
16. T



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DAYBED: A protected bed where a bear rests when it is not traveling, feeding, or hibernating.

Maps for the location of the wolves and close relatives:



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Project WILD Activity Guide 5430 Grosvenor Lane, Bethesda, MD 20814.

Project WILD Washington Department of Fish & Wildlife, 600 Capitol Way North, Olympia, WA  
98501-1091 (360) 902-2808



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# WOLF ORGANIZATIONS

Alaska Wildlife Alliance  
P.O. Box 202022  
Anchorage, AK 99520

International Wolf Center  
1396 Hwy. 169  
Ely, MN 55371

Mexican Wolf Coalition  
207 San Pedro NE  
Albuquerque, NM 87108

Timber Wolf Alliance  
Sigurd Olson Environmental Institute  
Northland College  
Ashland, WI 54806

Wild Canid Survival and Research Center  
Wolf Sanctuary  
P.O. Box 760  
Eureka, MO 63025

Wolf Park  
North American Wildlife Park Foundation  
Battle Ground, IN 47920

Wolf Education and Research Center  
P.O. Box 3832  
Ketchum, ID 83340

Defenders of Wildlife  
1101 Fourteenth Street N.W.  
Washington, D.C. 20005

National Wildlife Federation  
1400 Sixteenth Street N.W.  
Washington, D.C. 20036-2266

Preserve Arizona's Wolves (P.A.WS)  
1413 E. Dobbins Road  
Phoenix, AZ 85040

Mexican Wolf Coalition of Texas  
P. O. Box 1526  
Spring, TX 77383-1526

White Sands Wolf Coalition  
P.O.Box1347  
Alamogordo, NM 88311-1347

