Zoo Activity Packet

Wolves

Dear Educator,

Niabi Zoo, located in Coal Valley, Illinois, is part of the Rock Island County Forest Preserve. The ground covers 38 acres, with an additional 200 acres set aside for native flora and fauna preservation. Niabi, an Oswego Indian word means "young deer spared from the hunter's arrow". A fitting name, Niabi is home to a variety of animals.

Niabi Zoo takes pride in the quality animals and experience we provide for our communities! Our education department is committed to providing top quality educational programming. It is our goal to help spread the message about the importance of caring for our earth by leaving healthy ecosystems for our families and future generations.

Niabi Zoo is a great place to visit and we want to make your experience as educational as possible. The purpose of this material is to encourage students and teachers to explore the animal kingdom while learning about conservation efforts to protect our ecosystems.

Zoos provide an opportunity to learn about animals, but more importantly, to develop positive attitudes and curiosity about nature. Niabi Zoo hopes to create an adventure that encourages our visitors to leave this experience with a greater appreciation for all living things!

After completing this guide, we ask that you complete and return the attached evaluation form. We would love to hear your comments and appreciate any suggestions for improvement!

Sincerely,

Education Department
Niabi Zoo

Teacher Guide
Red Wolves

Objectives:

1. Students will be able to identify physical characteristics of the red wolf.
2. Students will be able to discuss the social behavior of wolves including wolf packs, communication, and body language.
3. Students will be able to differentiate between fact and fiction information about wolves.
4. Students will be able to identify similarities between wolf packs and human families.

IL State Learning Standards that could be applied to this material:
1A, 1B, 1C; 2B; 3A, 3B, 3C; 4A, 4B; 5A, 5B, 5C; 10A; 11A; 12A, 12B; 17A, 17B, 17C

Niabi Zoo
Evaluation Form

Packet/ Kit

Please take a few minutes to complete this form and return to the Education Department. We appreciate your input to help us provide quality educational programs and materials! Please return evaluation form to Niabi Zoo, Kohler Education Center. All returned evaluation forms will be entered for a drawing!

Which packet/kit did you use:

Scavenger hunt **Notebook tour** **Zoo Trunk**

Zoo Activity Packet **Creature Feature Kit**

Please specify title: _____

Name: _____

Address: _____

_____

Please rate the following by circling the appropriate number:

1= Unsatisfactory, 4= Excellent

Information provided was useful?	1	2	3	4
Subject material was age appropriate	1	2	3	4
Would you recommend this packet/ kit to others	1	2	3	4

If used in correlation with a field trip to Niabi Zoo:

Packet/ kit corresponded with the field trip	1	2	3	4
Pre and post activities were relevant	1	2	3	4

Table of Contents

Educator letter.....2
Objectives/ Learning Standards.....3
Evaluation form.....4
Table of Contents.....5
Vocabulary Sheet.....6
General Wolf Information.....7, 8
Communication.....9
Body Language.....10
Wolf Packs.....11
Facts & Fiction.....12
The Food Chain.....13, 14
Pre Trip Activities.....15
"What I Know About Wolves" worksheet.....16
"Animal Investigator" worksheet.....17, 18
Food Chain activity.....19
"What's For Lunch" worksheet..... 20
"What's For Lunch" answer key..... 21
Post Trip Activities..... 22
"Fact or Fiction" worksheet.....23
"Wolves At Our Door" lesson plan.....24, 25, 26
"What's For Supper" worksheet.....27
Answer Keys.....28

Vocabulary Sheet

Alpha female: The dominant female in a pack of wolves.

Alpha pair: The alpha male and the alpha female in a pack of wolves.

Camouflage: The way animals hide by blending in with their surroundings

Carnivore: A mammal with specially shaped teeth that feeds mainly on meat.

Endangered: At risk of extinction.

Extinction: The permanent disappearance of a species

Habitat: The natural home of a species.

Herbivore: An animal that eats only plant food.

Howl: The call or sound made by a wolf or pack of wolves.

Mammal: A warm-blooded animal with hair that feeds its young on milk

Omnivore: An animal that eats both plant and animals.

Pack: A group of wolves who hunt and live together

Predator: An animal that lives by predation (the act of obtaining food by the killing and consuming of animals).

Red Wolf

The red wolf used to range throughout the southeastern United States from the east coast to about western Pennsylvania and south to Texas. Due to its predatory nature, it was seen as a threat to cattle. Many wolves were exterminated as part of government extermination programs aimed at protecting livestock. However, wolves were blamed for a lot more than they actually were responsible for.

Red wolves are currently listed as critically endangered. They were once extinct in the wild The only red wolves now found in the wild are members of a pack which was reintroduced to the Alligator River National Wildlife Refuge in North Carolina. Other attempts to re-introduce red wolves to the wild have failed. However, captive populations exist in several zoos nationwide.

Red wolves can range from light tan to back in coloration. They are named for the reddish color on the head, ears and legs. Smaller than gray wolves, red wolves sometimes resemble coyotes. Most live in packs which are essentially family groups, although some animals will travel alone. Packs are nomadic and may range 10 to 100 miles. During the time when the female has her pups in the den, the pack stays in one place. Other than that time, they are always on the move.

Their primary prey includes white-tailed and small mammals such as raccoons, although they frequently eat rodents or even insects. They will also eat various kinds of plants to get needed vitamins and minerals. Wolves have good hearing and a well developed sense of smell. This helps them find prey in their forested environment. Wolves have sharp eyesight. Red wolves usually hunt alone or in pairs at dusk or early in the morning.

Wolf packs are territorial. If there is an abundance of prey, several packs may have overlapping territories. The pups are usually born in April with an average litter size of 3-5 pups. Food is brought to the mother by the father or possibly other adults if they are pack members. All pack members will take turns looking after the pups once they emerge from the den at about one month. Wolves are very social animals and have elaborate facial and body language displays that allow them to communicate to each other. The average life span of a wolf can be up to 18 years, but is more likely to be around 10 years.

Wolves don’t hibernate in their dens. When the weather is bad, they may curl up in a ball and let snow drift over them to provide extra insulation. They sleep in the open as they don’t have many predators to fear. One member of the pack will stay alert and act as a sentinel to warn the others of danger.

Wolf tracks, like those of all canids, show four toes on each foot with claw marks present. Wolf tracks are robust, often measuring 4¼ to 4¾ inches long. Wolf tracks can be difficult to distinguish from those of large dogs. The main difference is in habitat. Wolves are found farther from human habitation than dogs are. The stride of a wolf can be 26 to 30 inches. Wolves can run 30 to35 mph. At top running speed, the distance between groups of tracks can be six to eight feet.

Wolf scat will usually have the hair and bones of its prey. Scat can be 1½ to 2 inches in diameter. Some plant material may be present, such as grass or seeds.

Wolves will mark their territory with scent markings. Scent posts on prominent landmarks tell other canids who is around. Wolves, as do most canids, use urine to mark the prominent landmarks. They also leave droppings in the middle of trails to advertise their presence. Canids will scrape near the scent deposit to spread the scent around and let other canids know whose territory they're in.

Wolves and other animals, including bears and cougars, will cover partially eaten meat with dirt. You should never approach one of these camouflaged carcasses because the animal may not be far away. Bears and cougars will defend these partially eaten carcasses. Wolf packs may or may not, but it’s best not to take the chance.

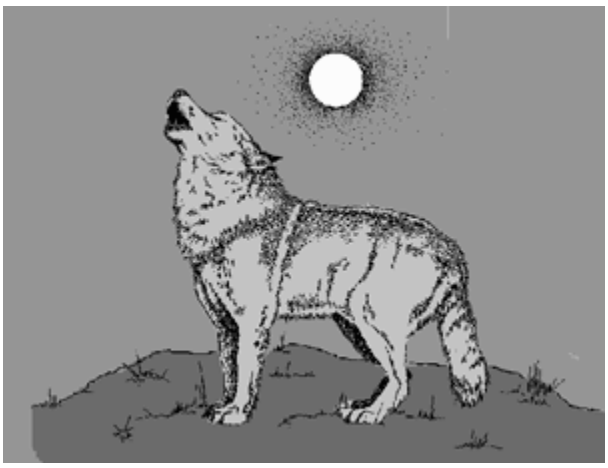
Communication Between Wolves

One of the most beautiful and haunting forms of communication found in our world is the howl of a wolf pack. Wolves use many forms of vocalization to communicate; however, their howl is the most distinguishing. Wolves also growl, whimper, whine, bark, and squeal, with each of these carrying different meanings. The whimpering or whining heard from wolves is often a display of friendliness. Wolves use growls to threaten or enforce pack hierarchy, while barks are used to signal alarm.

The howl of a wolf provokes either pleasure or fear in humans. Howls are used by a pack to bring a pack together, for celebration, or to protect their territory. The howl represents yet another sign of pack unity and the strength of that unity.

Each wolf carries a unique note when howling, much like each wolf has a unique voice. Generally, a human can determine when only one wolf is howling; however, when two or more join in chorus, it is often difficult to determine how many wolves are in the howl.

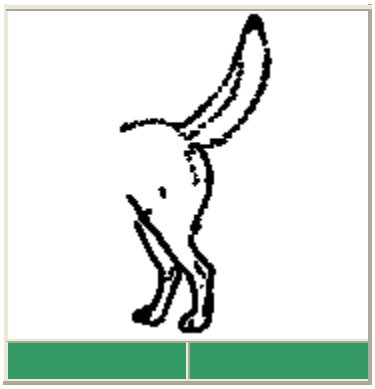
Wolves have a complex vocal communication system. They use yelps, whines, growls and body language to communicate amongst themselves. Posture is used to indicate the wolf's position in the pack. Submission to a dominant pack member is indicated by a cowering stance and whining. The submissive wolf will lick the dominant wolf's face. A wolf will growl, snarl, lay back its ears, and raise the hair on its back to let another wolf know to back off. Wolf howling serves as a communication between the entire pack. Wolves tend to give long howls instead of the yapping calls that coyotes are known for. When hunting, the pack will scatter out and use howls to keep in contact with each other. If a wolf finds prey or food, it will call the others with a special howl.



Body Language of Wolves

Wolves rely not only on howls to communicate, but their body language as well. Wolves use their entire body to communicate--their stances, their facial expressions, their stares, and even their tails. Dominance can be shown by a wolf standing on its hind legs, while submissive wolves may roll over on their back and expose their underside to a dominant male, as in the image to the left.

One of the most telling forms of body languages that wolves utilize is the tail. The position of the tail can indicate dominance, submission, aggression, fear, and other communications.



The image to the right shows dominance, with the tail high and curled. A high, wagging tail can mean that the wolf is in a playful mood.

The image to the left shows a tucked tail. This is generally how a wolf will display submissive behavior to a dominant wolf. Additionally, a tucked tail may also indicate fear.

A relaxed wolf will often just have it's tail hanging straight down, while a tense or aroused wolf will have a tail pointing straight out, as in the image to the right. This can indicate that a wolf senses danger or is about to attack.

Wolves also use their eyes and their scent to communicate. The penetrating stare of a dominant wolf is yet another form of communication used to maintain order within the pack. Scent markings are used to mark a pack's territory and this scent communicates to other wolf packs that the territory is occupied.

Wolf Packs

Wolves are very social animals, and live in a family type unit called a pack. Packs can range anywhere from two wolves to over twenty wolves. Most packs in the continental United States have six to eight wolves, while packs in Alaska and Canada have between ten and twenty wolves.

The pack is generally made up of an adult male and female who have mated and produced offspring. Generally the pack is made up entirely from wolves who are related to each other, although a non-related wolf may become a member of a pack.

The pack follows a strict hierarchy to help maintain order within the pack. The main rankings in the hierarchy are alpha wolf, beta wolf, and omega wolf. The alpha wolf is the lead wolf and is the dominate wolf of the pack. The next in line is the beta wolf. The beta wolf often acts the caretaker of the pups, as well as the discipliner to reinforce the alpha's decisions. The omega wolf is the lowest ranking member of the pack. The omega wolf is subordinate to all other wolves in the pack and must often feed on prey when the rest of the pack is done. The rankings often go in pairs, so that there is a male and female of each rank, but this is not always the case. Most often there is an alpha male and alpha female, but there may not be pairings for the rest of the rankings. The other wolves fall between the beta wolf and the omega wolf.

The alpha wolf often displays very confident characteristics. The alpha wolf has a very confident stride, generally has the tail raised, and ears forward. Often even a look or glare from the alpha wolf is enough to cause another wolf in the pack to display subordinate behavior, such as tucking the tail or lower the body and crawl to the alpha wolf.

The pack is a very tightly knit, highly organized group. For survival a pack will travel, hunt, protect territory and raise pups together. Many believe that the pack is one of the tightest social organizations known to man.

Facts and Fiction about Wolves

Many of the perceptions of wolves stem from how the wolf is represented in stories--folklore, fiction, myths, and legends. Many of the prevailing stories depict wolves in a negative way--such as in Aesop's Fables, Little Red Riding Hood and the Three Little Pigs.

In fiction, the wolf is sometimes represented as an evil, conniving carnivore which preys on small children and livestock. While wolves do sometimes prey on livestock, they are responsible for a very small percentage of the livestock deaths in North America. Attacks by healthy wild wolves on humans is almost unheard of, and there has never been a fatal attack on a human by a healthy wild wolf in North America. Those attacks that do take place might involve an unhealthy wolf, or a human who is some how enticing the wolf to action or impinging upon the wolf's territory.

Other cultures have better views of the wolf. In Roman mythology, the god Mars considered the wolf a sacred animal, and the founders of Rome were raised by a wolf. Native Americans also hold the wolf in high regard and believe that wolves carry characteristics that humans should also find important, such as strong family structure and teaching the young. Eastern Europeans often viewed wolves as protectors of the harvest.

For many in North America, the negative perceptions of wolves will continue as is evidenced by some phrases in our language: "cry wolf", "wolf at the door", "wolf in sheep's clothing", and "throw it to the wolves". As time passes and education efforts continue, these perceptions seem to be changing to a more realistic view of the wolf as a vital part of a balanced ecosystem.

There seems to be very little in the way of a 'middle ground' about wolves. They will probably always be both revered and hated. However, perhaps humans will better understand wolves by separating out the fact and the fiction.

The Food Chain:
An ecosystem is a living community which depends on each member and its surrounding environment. The living part of an ecosystem is sometimes called a food chain.

Every participant in an ecosystem has an important part to play and if one becomes more dominant than the others, the ecosystem can develop problems.

We'll start with the producers. These are living things which take the non living matter from the environment, such as minerals and gases and uses them to support life. Green plants are considered producers and they are at the beginning of the food chain.

Next are the consumers. These living things need the producers to be their food.

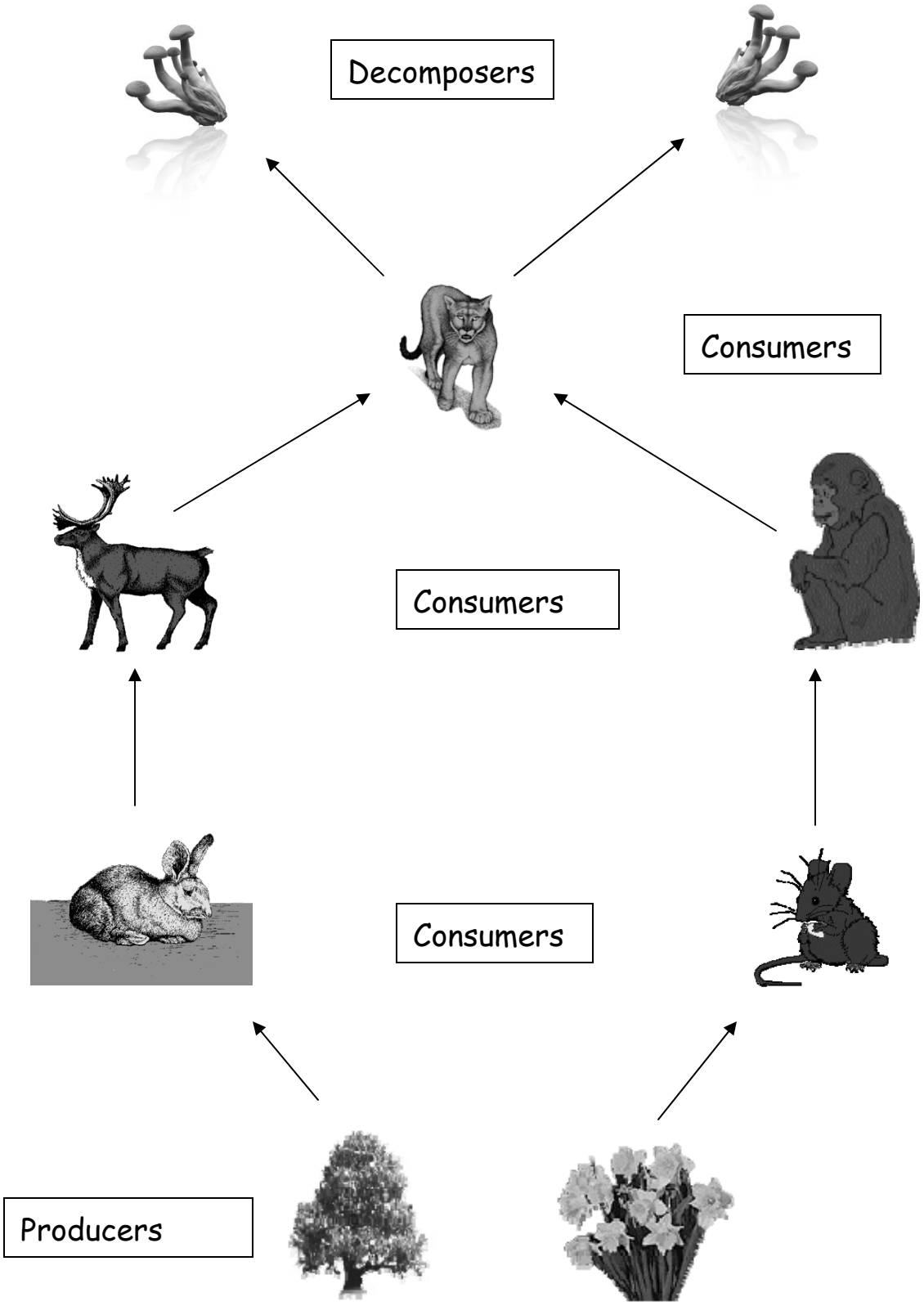
Animals who eat plants are called herbivores. They are considered consumers and are next in the food chain.

Animals who eat other animals are called carnivores. They also are considered consumers and are a link farther along on the food chain since they need the herbivores for their food.

Animals and people who eat both animals and plants are called omnivores, and they are also part of the consumer piece of the ecosystem.

Finally, the last part of the ecosystem is the decomposers. These are the living things which feed off dead plants and animals and reduce their remains to minerals and gases again. Examples are fungi, like mushrooms, and bacteria.

The Food Chain



Pre Field Trip Activities

1. Have students research the history of the wolf... how has the wolf population dwindled, to the point where they have become an endangered animal? *(3A, 3B, 3C; 5A, 5B, 5C; 12A, 12B; 17A, 17B)*

2. Have students research the numbers of gray wolves left in the wild today. Using a map or globe, discuss with students where wolves exist today. Have students research the culture and society of those regions or countries. *(3A, 3B, 3C; 4A, 4B; 5A, 5B, 5C; 12A, 12B; 17A, 17B)*

3. Read the students several stories about wolves that depict wolves as a mean, vicious animal. Explain to students that is the perception most people have always had about wolves. Also explain what measures are being done to restore the gray wolf population. *(1B, 1C; 4A; 12B; 17A, 17B)*

4. Talk to the students about the habitat of wolves. *(4A; 5A, 5B, 5C; 12B)*

5. Have students complete Part 1 of the "What I Know About" worksheet. *(3A)*

6. Call on students to become investigators before visiting Niabi Zoo. Have them complete the "Animal Investigator" worksheet. *(1B, 1C; 3A, 3B, 3C; 5A, 5B, 5C)*

7. Have students select one animal. Using that animal, have students create a food chain that shows where their animal fits in. Students will have to research the diets of various animals to make sure their food chain is accurate! *(1B, 1C; 3A, 3B, 3C; 5A, 5B, 5C; 11A; 12A, 12B; 17A, 17B)*

8. Ask students to develop 3 research questions based on wolves. Collect questions are redistribute to class, having them answer the questions through research. *(1B, 1C; 3A, 3B, 3C; 5A, 5B, 5C 11A)*

9. Have students select one animal. Using that animal, have students create a food chain that shows where their animal fits in. Students will have to research the diets of various animals to make sure their food chain is accurate! Have students make a food chain... see attached worksheet. *(1C; 3A, 3B, 3C; 5A, 5B, 5C; 12A, 12B)*

10. Have students complete the "What's For Lunch" worksheet.

What I Know About Wolves

Name: _____

Part 1: Complete before visiting Niabi Zoo.

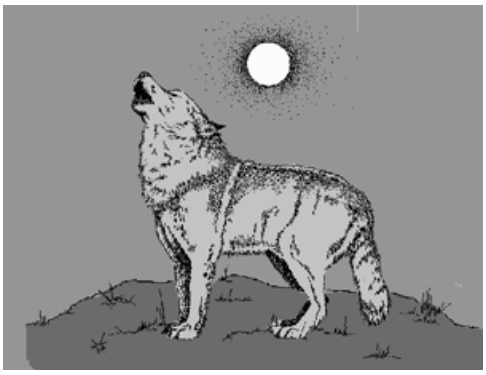
I think I know that wolves _____

_____

_____

_____

_____



Part 2: Complete after visiting Niabi Zoo.

I know that wolves _____

_____

_____

_____

_____

Animal Investigator

Animal I am investigating:

_____

Use 3 sources to find information:

Source # 1: _____
Source # 2: _____
Source # 3: _____

Write 3 things you learned from these sources…

1. _____

_____

_____

_____

_____

2. _____

_____

_____

_____

_____

3. _____

_____

_____

_____

_____

Food Chain

Plants make food for all living things and use the sun's energy to grow. When animals eat plants, they get energy. You also get energy from eating food. Your food may be plants or animals.

A food chain shows how energy is passed from one living thing to another. All food chains start with plants. You can make your own food chain.

You will need:

- 8 ½ in. by 11 in. sheets of paper or construction paper
- Crayons or markers
- Pencils
- Tape
- Pictures of plants and animals

1. Cut a few pieces of paper in half the long way.

2. Find a picture of a plant or draw one. Tape it to one of these strips of paper.

3. Loop the ends of the strip of paper together and add tape to make a closed circle. You now have the first link in your food chain.

4. Find or draw a picture of something that can eat your plant. Tape it to another strip of paper. Put one end of the strip through the first link and tape the ends to make another closed circle. Now your food chain has two links.

5. Find or draw a picture of something that eats the animal that is eating your plant. Make a third loop. Follow the directions in Step 4.

6. Keep going.

Here are some food chain ideas for you to start with:

Grass—prairie dog—rattlesnake

Acorn—gray squirrel—red-tailed hawk

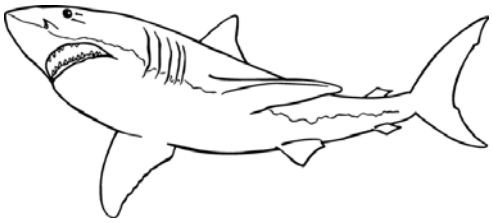
Flower—beetle—skunk—great horned owl

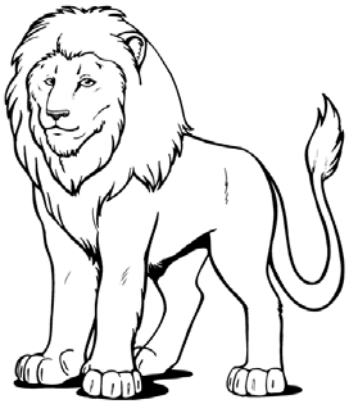
Mayfly—sunfish—wood stork—alligator

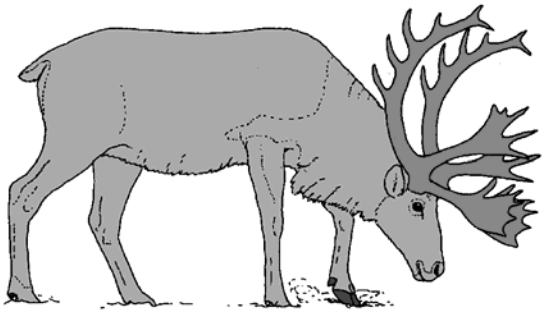
WHAT'S FOR LUNCH??

Name: _____

Circle the pictures of what a wolf would eat.



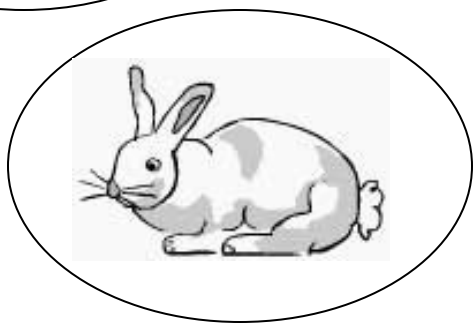


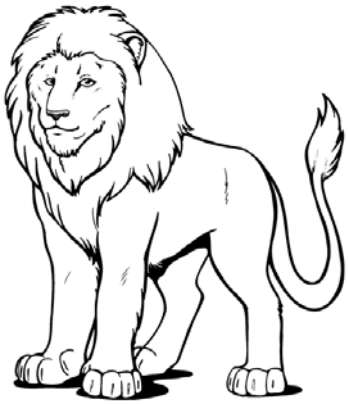


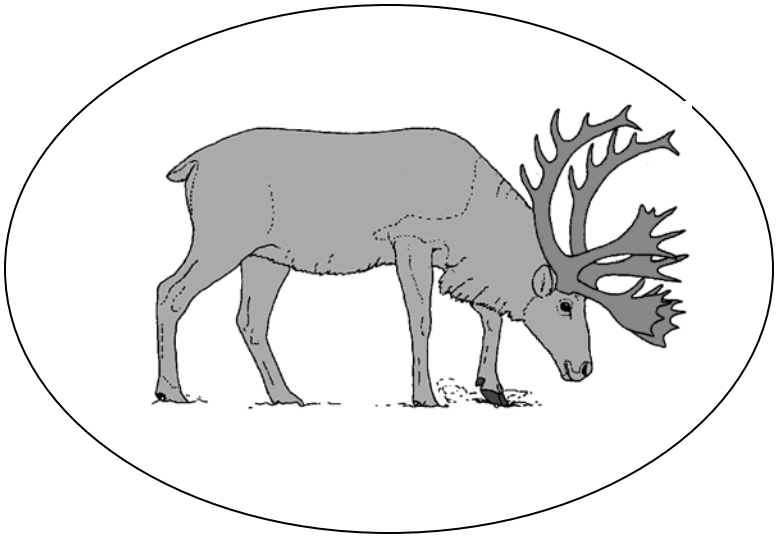
WHAT'S FOR LUNCH?? – ANSWER KEY

Name: _____

Circle the pictures of what a wolf would eat.







Post Field Trip Activities

Behind each activity you will find state goals that can be applied to each activity.

1. Have students complete Part 2 of the "What I Know About Wolves" worksheet. *(3A, 3B, 3C)*

2. Have students complete the "Fact or Fiction" worksheet. *(3A, 3B, 3C; 12A)*

3. Break students into groups. Have students research ways the class can help with conservation efforts. Have each group present their findings to the classroom. Take a class vote on which idea they like the best and carry out that idea. *(1B, 1C; 3A, 3B, 3C; 4A, 4B; 5A, 5B, 5C; 12A, 12B; 17A, 17B)*

4. Lesson Plan: Wolves At Our Door
   a. Grade levels 6-8

5. Have students use their "Animal Investigators" worksheet to create animal fact cards. These cards should contain true or false facts on various animal(s) studied. Use 3x5 index cards. Add creativity by having students draw pictures or cut out pictures and glue to the cards. *(3A, 3B, 3C; 4A, 4B)*

6. Have students complete the "What's for Supper?" worksheet. *(3A, 10A)*

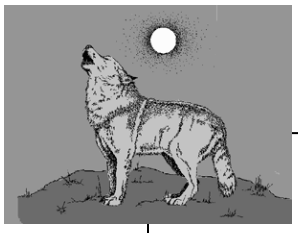
7. Have students make a homemade "Zoo Book" on their field trip to Niabi Zoo! *(3A, 3B, 3C)*

8. Have each student research wolves and choose a species of wolf that is interesting to them. Have them gather facts and pictures of that species of wolf. Once research is complete, have students report their finding to the classroom. *(1B, 1C; 3A, 3B, 3C; 4A, 4B; 5A, 5B, 5C; 12A, 12B)*

9. Have students put together a book which includes 1) a fictional story about a wolf, that depicts wolves as "good" animals, 2) pictures to go along with the story. Choose several students to read their stories to the class. *(3A, 3B, 3C; 4A, 4B)*

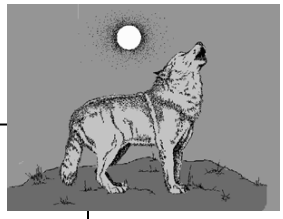
Fact or Fiction?

Name: _____



Fill in box with ***facts*** about wolves.

Fill in box with ***myths*** about wolves.



Wolves at Our Door

LENGTH OF LESSON: Two class periods

GRADE LEVEL: 6-8, *however this material can be adapted to any grade level.*

CREDIT:
Louise Roy Fowler, science teacher, Oak Crest School, Silver Spring, Maryland.

OBJECTIVES:
Students will understand the following:

1. Wolves are social animals that live in packs with highly organized, complex social systems.

2. Some important similarities exist between a wolf pack and a human family or social group.

MATERIALS:

For this lesson, you will need:
Research materials on wolves
Computer with Internet access

PROCEDURE:
1. Initiate a class discussion about wolves. What have your students learned about wolves and wolf behavior?

2. In discussion, make sure students understand that wolves are social animals that live in packs with complex, highly organized social systems. Go on to let students know that, in some important ways, wolf-pack society is similar to human society.

3. Divide your class into research teams to learn about wolves. Instruct students to focus on finding ways in which the wolf pack is both similar to and different from a human family or social group.

4. Provide students with a list of words and phrases to guide their research:

- Teamwork and cooperation
- Alpha and omega
- Family devotion
- Group loyalty
- Hierarchy, or status in society
- Child (pup) rearing
- Sharing of wealth (food)

5. After teams complete their research, have team members create a comparison-and-contrast chart showing what they have learned from their research about the similarities and differences between a wolf pack and a human social group.

DISCUSSION QUESTIONS:

1. Discuss how wolves have been portrayed in literature and mythology. How might these portraits have affected our current beliefs about wolves?

2. Compare and contrast the wolf pack family and community with the human family and community. What characteristics do they have in common, and how do they differ?

3. Compare and contrast the characteristics of wolf pups and dog pups. What observable traits of the wolf pups are indicators of adult wolf behavior? Do wolf pups make good pets? What about hybrid pups (half wolf and half dog)?

4. Describe how positions may change in a wolf pack hierarchy. Compare this to human behavior. Consider family, school, and work situations.

5. Analyze the impact the near destruction of wolf populations in North America has had on its prey populations (e.g., deer, elk, antelope), and other related species in their environment. (For example, in Yellowstone National Park, the removal of wolves has increased the elk, antelope, and deer populations, increasing the destruction of vegetation and habitat—thereby decreasing other herbivorous species such as beaver and rabbit. [source: Playing God in Yellowstone by Alston Chase, 1987]).

6. Discuss the role of human intervention in deciding whether and how to reestablish wolf populations in the wild.

The Wolf Is Back!
Have students research work being done to relocate wolves or reintroduce them into wilderness areas. Then have students act out, through research and role-playing, the relocation or reintroduction of wolves into an area. Assign students to represent and express the views of scientists, wolf conservation groups, farmers, environmental agencies, local citizens, and reporters.

Progress Report
Challenge students to find out what advantages being listed as an “endangered species” has afforded the wolf. What progress has been made in reintroduction programs? How do wolf protection programs compare to those for other animals? Students can contact and conduct a survey of wolf conservation groups for wolf population statistics and present their findings.

SUGGESTED READINGS:

The Sawtooth Wolves
Jim Dutcher with Richard Ballantine. Rufus Publications, Inc. 1996

The Origin of Dogs: Running with the Wolves
Virginia Morell. Science, June 13, 1997

The Return of the Wolf to Yellowstone
Thomas McNamee. Henry Holt, 1997

The Wolf Almanac
Robert H. Busch. Lyons and Burford, 1995

WEB LINKS:

The Searching Wolf... http://www.iup.edu/~wolf/wolves.htmlx

Wolf Park Home Page... http://www.wolfpark.org/

Wolf Society Home Page... http://www.route001.se/wolfeye/wolf/index.html

Wolf Education and Research Center Home Page
http://www.wolfcenter.org/index.html

Ecological Decision Making
http://outcast.gene.com/ae/AE/AEPC/WWC/1992/ecologyanddecision.html

Wolf Howls... http://www.pbs.org/wgbh/nova/wolves/howl.html

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What's for supper?

Name: _____

Wolves don't always catch the prey they go after. In fact, many more animals escape than are caught.

A pack of wolves finds a herd of moose grazing on some grass. They decide to see how many they can catch for supper… the pack of wolves ran up to the herd of moose and they began running. 7 moose were very fast and got away. 2 moose decided to turn around and put up a fight with the wolves. When the wolves got close, they decided not to fight and ran away. The remaining 8 moose decided to run and kicked with their feet and used their antlers to keep the wolves from getting caught. All but one was able to get away from the wolves.

How many moose were in the herd when the wolves attacked them? _____

How many moose were able to get away from the wolves without being harmed? _____

How many moose were caught and became supper for the wolves? _____

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How many moose were in the herd when the wolves attacked them? 18

How many moose were able to get away from the wolves without being harmed? 17

How many moose were caught and became supper for the wolves? 1