

Bear Essentials

Rangers in the Classroom—Presentation
Lesson Plan—3rd and 4th Grade



Grade Level(s): 3rd & 4th

Setting: Classroom

Duration: 45 min —1 hour

Standards Addressed:

3rd Grade

- ° Science—Life Sciences:
3.a, 3.c, 3.d
- ° Listening and Speaking:
1.1, 1.3

4th Grade

- ° Science—Life Sciences:
3.a, 3.b, 3.c
- ° Listening and Speaking:
1.1, 1.2

Vocabulary:

adaptation, boar, carrion, cub, dormant, habitat, hibernate, range, sow, species, territory, yearling

Introduction:

Welcome to the Rangers in the Classroom—Bear Essentials presentation. This program introduces students to the American Black Bear. It provides a framework for understanding Black Bear habitat, diet, and lifecycle. It also explains how human activity can have a negative impact on a bear's natural behavior.

Objective:

After completing this lesson, 3rd and 4th grade students will be able to:

1. Explain why black bears are dormant during the winter.
2. Identify two senses black bears rely on for finding food and sensing danger.
3. Discuss what happens when black bears become accustomed to eating human food.

Materials:

- ° *We Are Bears* by Molly Grooms and Lucia Guarnotta
- ° Laminated photo sheets corresponding to *We Are Bears*
- ° Animal Materials:
 - ° Black Bear skull (two)
 - ° Black Bear pelt (two)
 - ° Black Bear scat replica (one)
- ° Black Bear puppet
- ° A Bear's Life Game: cards (seventy-five) and cloth bags (two)
- ° Park maps and student fee waivers



Bear Essentials

Rangers in the Classroom—Presentation
Lesson Plan—3rd and 4th Grade



Presentation:

Introduction

Bears capture our imagination as few other animals do. They have inspired stories and cultural icons such as Winnie the Pooh, Yogi bear, Paddington bear, Goldilocks and the Three Bears, Smokey Bear, and teddy bears. They appeal to many of our emotions and values: fear, humor, grace and strength.

Seeing a bear in the wild is an unforgettable experience. Sequoia and Kings Canyon National Parks—right in your backyard—is home to the American black bear, which is one of the 8 species of bears found in the world. Black bears are found only in North America. Today, we will learn about these fascinating bears and how our behavior influences bear behavior and how bear behavior influences us.

Read *We Are Bears* by Molly Grooms and Lucia Guarnotta aloud to the class.

A. Where does this story begin? It begins in the mother's den. Mama bears/female bears are called sows.

1. What do you think would make a good den for a bear? Get students thinking about what would make a good, safe and warm den.
2. Black bear dens:
 - a. Are usually caves, rocky overhangs, hollow trees or the holes created by fallen trees.
 - b. The size of the den depends on the size of the bear. There should be just enough room for the bear to turn around.
 1. A larger den would waste precious body heat.
 - c. Usually, they only use a den for one winter. They find a new one each year.

B. Why were the cubs and the sow in the den? "Hibernating."

1. Ask the students to describe what hibernation is like.
2. Black bears are not true hibernators. Their winter sleep is usually called hibernation anyway.
3. They are dormant because their primary source of food—vegetation—is scarce during the cold season.
4. During the winter dormant period they do not eat, drink, urinate or defecate, but may wake up if aroused, to change position or to leave the den temporarily.
5. They live off the body fat they accumulated by eating during summer and fall.
6. The length of hibernation depends on climate, location, age, sex and reproductive status.
7. Sows will have their cubs during this period.

C. Black Bear Cubs:

1. Are born blind in the mother's den during the winter.
2. They are covered with very fine hair, but look almost naked. The mother's body heat keeps them warm.
3. They weigh about half a pound at birth.
4. Usually, two cubs are born, but there can be from one to four in a litter.

Bear Essentials

Rangers in the Classroom—Presentation
Lesson Plan—3rd and 4th Grade



5. Boars do not stay around to help raise the young. They may eat the cubs.

D. Forest Habitat—When the cubs came out of the den, what world did they find?

1. Most black bears live in a forest habitat. (In the far south, they may live in swamps. In the far north, they may live in areas without trees.)
2. What does the forest provide for the bears? Get students thinking about what bears need to live and survive.
3. Forest habitat provides food, water, mating opportunities, space and shelter.
4. Bear size can be affected by habitat quality. Abundant, highly nutritional food produces larger bears.
5. California used to have both black bears and brown bears (a.k.a. grizzly bears).
 - a. What happened to brown bears in California?
 1. Brown bears used to live in the interior of California.
 2. They were hunted to extinction in the early 1920's (almost one hundred years ago).
 3. There is one brown bear left in California. It can be found on the state flag.

E. Territory or Home Range

1. Within the forest habitat, bears stick to an area called their territory or home range.
 - a. They have home ranges, but are not territorial—meaning they do not defend a particular area from other bears.
 - b. The size of the territory depends on the amount of food available for the bear. If there is little food, the range will be bigger for the bear to find enough to eat.
 - c. The bear usually stays in the same territory its whole life, but they do not stay in one place within this area.
2. Compare “Territory or Home Range” with “Range”
 - a. Range describes where in the world the animal can be found. The range of black bears is in the forested areas of North America. Show map of black bear range.
 - b. Since this is also where humans live, the black bear is the kind of bear that people are most likely to see.

F. Sows and Cubs—What did the sow do the first day out of the den with her cubs? She taught them how to be a bear.

1. Sows spend the first summer teaching their cubs what to eat and where to find it.
2. Bears have excellent memories and will remember places where they found a tasty meal.
3. They will return to these places year after year and teach their cubs the route to these favorite feeding areas (much like humans return to a favorite restaurant).
4. They are always looking for food. It is how they spend most of their waking hours, for they must eat enough and put on enough fat to make it through the winter.
5. Cubs learn to watch their mother for signs of danger, but they are also very curious and playful.
6. If they wander too far, the sow will call them back with grunts or will woof (like a dog) to warn of danger.
7. In the story, the cubs knew to climb a tree at their mama's signal. She will also signal when it is safe to come down.

Bear Essentials

Rangers in the Classroom—Presentation
Lesson Plan—3rd and 4th Grade



8. Cubs stay with their mother for the first year. They will den together their first winter.
9. When they come out of hibernation in their second spring, the cubs are now yearlings.
10. They leave their mother during their second summer, but siblings will remain together for another year or more. Usually, by their third summer, they each go their own way to live their solitary life.

G. Black bears have a variety of physical features that serve different functions. Different features make it possible for them to be climbers, swimmers, searchers etc.

1. Snout
 - a. Bears rely heavily on their sense of smell to find food and sense danger. They are always sniffing the air to check for other bears, humans and threats.
 - b. They have a much keener sense of smell than humans.
 - c. Show the bear skull and discuss the size of nasal passages compared to skull size and the “webbing” within the passages that form the framework for scenting cells.
 - d. They can detect smells three miles away. Give an example of this distance, so the students can imagine how far this is.
2. Scent
 - a. Each bear has its own scent. During mating season, the bears will rub their scent on trees to attract mates.
 - b. A bear’s scent is also in its scat and tracks.
 - c. Scent and an excellent sense of smell helps them detect their cubs.
3. Claws
 - a. Claws are short and curved. They are arranged in an arc and do not retract.
 - b. Show pelt with foot pad and claw.
 - c. Even adult black bears can climb trees, unlike the much larger brown bear, which can weigh over a thousand pounds—much too heavy to climb trees.
4. Size
 - a. In this region: Females—up to one hundred and fifty pounds. Males—two hundred and fifty to three hundred pounds.
 - b. In other parts of North America, they grow up to six hundred pounds.
5. Lips
 - a. Their lips separate from their gums, so they can use them to grasp small berries.
6. Tongue
 - a. Their long, sticky tongue is very sensitive. They stick it into tree trunks to get ants and other insects.
7. Ears
 - a. Prominent, oval shaped ears to help capture sound.
 - b. Cubs ears are almost the same size as adult ears so they are very prominent on cubs.
 - c. Black bears have very good hearing.
8. Fur
 - a. Color: black, brown, cinnamon or blond with a tan muzzle or snout.
 - b. Blaze: white patch of hair on their chest or throat. It can help identify the bear.
 - c. The top layer of long shiny hairs are called guard hairs.
 - d. In preparation for winter, bears will grow a thick layer of fur under the light

Bear Essentials

Rangers in the Classroom—Presentation
Lesson Plan—3rd and 4th Grade



summer coat. This will be shed in the spring to keep cool in the warm summer.

9. Teeth

- a. Black bears are omnivores. They eat both plants and animals.
- b. Their teeth reflect this. They have both meat eating teeth (canines to pierce, hold and tear into prey) and plant eating teeth (molars for mashing up and grinding plant material).
- c. Show skull and point out teeth and their function.

10. Body movement

- a. Bears are related to dogs, wolves and foxes.
- b. Their skeleton looks much like a dog's with larger bones.
- c. Their body looks lumpy and clumsy, but don't be fooled. They are strong and fast.
- d. Like humans, bears put their feet flat on the ground when they walk. Other animals like dogs, cats, horses and even elephants walk on their toes.
- e. The flat footed stance makes it easy for them to stand up, but they rarely walk on just two legs.
- f. When they walk, they turn their front paws inwards in a "pigeon toed" position.

H. Diet—Lots to eat in the world when you are an omnivore.

1. Most of their diet consists of grasses, roots, berries and insects, but they will eat fish, small mammals and carrion.
2. Bears are considered "opportunistic eaters" and eat anything.
 1. Problem: They will easily develop a taste for human food and garbage and start to behave unlike wild bears.

I. Behavior

1. When bears start foraging for human food (bending door frames to break into cars, tearing into a backseat to get into a locked trunk), this changes in foraging behavior causes changes in other aspects of bear behavior.
2. For example, black bears are generally most active early and late in the day, tending to nap through the hottest time of day. Changing foraging behavior causes changes in the times of day bears are active.
3. Diets heavy in human food also cause changes in the bear's preferred habitat.
4. Eating human food also changes bear behavior toward humans.
 - a. Bears are generally not aggressive to humans.
 - b. Fed bears become accustomed to humans as a source of food. They lose their natural tendency to steer clear of human interaction and may become aggressive when the food source is cut off.
5. A sow may act aggressively when she feels she cubs are being threatened.
 - a. An angry bear will lower its head with its ears pinned back. It may slap the ground with its paws, snort, or click its teeth before charging. Bluff charges are common, trying to scare away whatever it deems a threat.
6. Males show aggression toward each other during mating season. Why? Fighting over the best females.

Bear Essentials

Rangers in the Classroom—Presentation
Lesson Plan—3rd and 4th Grade



J. Humans and Bears

1. Human behavior influences bear behavior.
2. Humans are the biggest threat to black bears, which have few predators.
 - a. Black bears are killed for their gall bladders, which are sold on the black market in Asia as a remedy for liver ailments.
3. There is a healthy population of about half a million bears in North America.
4. Loss of good habitat is a threat in some areas. When humans build homes in the forests where bears live, they lose their natural home and some die.

Bear Activity—A Bear's Life Game

A bear's life is not easy. They need food, water, space and shelter. Bears also need good health, a chance to mate and lots of good luck. Some bears do not live long enough to have cubs. Some die in accidents or from starvation. Others are killed by hunters or poachers. In order for a sow to have cubs, she needs to weigh at least one hundred and seventy-five pounds and be three years old. To start the game, we will assume the cub has survived its first winter in the den. It has started venturing outside the den and now weighs twenty-five pounds.

Directions:

1. The goal of this game is for our bear to survive for three years and fatten up to one hundred and seventy-five pounds in order to have cubs. If you would like to use a bear puppet to represent our bear, give the bear a number, explain why bears are given numbers and not names in the park, introduce the bear to the students and explain the goal of the game.

*The idea is to get them vested in having this bear survive long enough to have cubs.

2. This is an interactive card game. There are seventy-five cards in the deck. Place the cards in one of the empty cloth bags. The second bag is for the "used" cards.

3. Each card in the deck represents an element of the bear's life. There are six types of cards: (1) weight gain cards; (2) weight loss cards; (3) neutral activity cards (no weight lose or gain); (4) DEN cards; (5) RELOCATION cards and (6) DEAD BEAR cards.

- a. The weight gain and weight lose cards correspond to fluctuations in a bear's weight based on environmental factors. If your bear's weight falls below zero, it has starved to death.
- b. The neutral cards correspond to things bears do that do not impact weight gain or loss.
- c. The DEN cards correspond to one year in a bear's life. This means the bear has survived a year and has dened for a winter season. The bear has also lost thirty pounds since it does not eat and will lose weight during hibernation.
- d. The RELOCATION cards correspond to the bear being caught stealing human food and has been relocated to a remote location. Once the bear has been caught and relocated three times, it is considered a problem bear and it is killed.

**Take this opportunity to reinforce the message about keeping bears away from human food.

- e. The DEAD BEAR cards correspond to other ways bears may die in the wild.

4. The ranger or the teacher will keep track of the bear's weight, number of DEN cards (i.e. years of life) and the number of RELOCATION trips on the board. Write these three columns on the board. Add or subtract weight as determined by the cards selected.

**Remember, we are starting with a cub that already weighs twenty-five pounds.

5. IF YOUR BEAR STARVES, DIES OR IS DESTROYED, YOU CAN START THE GAME AGAIN AS A NEW

Bear Essentials

Rangers in the Classroom—Presentation
Lesson Plan—3rd and 4th Grade



BEAR. Place all the cards in one bag and begin the game again. Keep track of the number of bears that do not survive and the number that survive long enough to have cubs.

6. To start the game: Place all the cards into a bag and mix them up.

7. The ranger will select a route through the classroom, just as a bear selects a route through the woods. Have each student select a card from the bag and read it aloud to the class. If you are using the puppet, pass it around to each student and encourage them to read their card as if they are the bear. Once a card has been used, it should be placed in the second bag of “used” cards.

8. When you have three den points and weigh one hundred and seventy-five pounds, you win and the bear survives to have cubs.

Conclusion

Black bears are complex creatures. They are always learning something new. We are lucky so many bears thrive in the forests of Sequoia and Kings Canyon National Parks. Since we share the environment with black bears, we must make sure our behavior does not change their behavior, for something magical is lost when a bear becomes no longer properly wild. Pass out park passes and encourage students to come to the park.

Bear Essentials

Rangers in the Classroom—Presentation
Lesson Plan—3rd and 4th Grade



Vocabulary

Adaptation—noun—a change or adjustment in structure or habits that allow a species or individual to improve its condition in relationship to its environment

Boar—noun—adult male black bears

Carrion—noun—the decaying flesh of dead animals

Cub—noun—a young black bear from birth to around age one

Dormant—adjective—in a state of rest or inactivity

Habitat—noun—the natural environment of an organism

Hibernate—verb—to pass the winter in an inactive or dormant state. Black bears are not true hibernators: their “hibernation” is a period of semi-dormancy

Range—noun—the region over which a population or species is distributed

Sow—noun—adult female black bear

Species—noun—basic category of biological classification, composed of related individuals that resemble one another, are able to breed among themselves, but are not able to breed with members of another species

Territory—noun—sometimes referred to as home range, although home range typically refers to where an animal spends its time; it is larger than an animal’s defended territory

Yearling—noun—young black bear in its second year of life. For black bears, this is the age when a young bear leaves its mother for the first time to live on its own.

Bear Essentials

Rangers in the Classroom—Presentation
Lesson Plan—3rd and 4th Grade



Bibliography

Anderson, Margaret, Nancy Field and Karen Stephenson. *Discovering Black Bears*. Middleton, WI: Dog-Eared Publications LLC, 2007.

Brown, Gary. *The Great Bear Almanac*. New York, NY: Lyons & Burford, Publishers, 1993.

Feeney, Kathy. *Black Bears*. Minnetonka, MN: NorthWord, 2000.

Martarano, Steve. "The Bear Facts on Black Bear Biology and Ecology." *Outdoor California*, Volume 63: No. 4 (July—August 2002): 3—45.

Wexo, John Bonnett. *Zoobooks Bears*. Poway, California: Wildlife Education, Ltd., 2005.

<http://www.zoobooks.com>

<http://www.greatbear.org>

<http://www.billybear4kids.com>

<http://www.defenders.org>

<http://www.sierrawildbear.net>

<http://animals.nationalgeographic.com/animals/mammals/black-bear.html>