

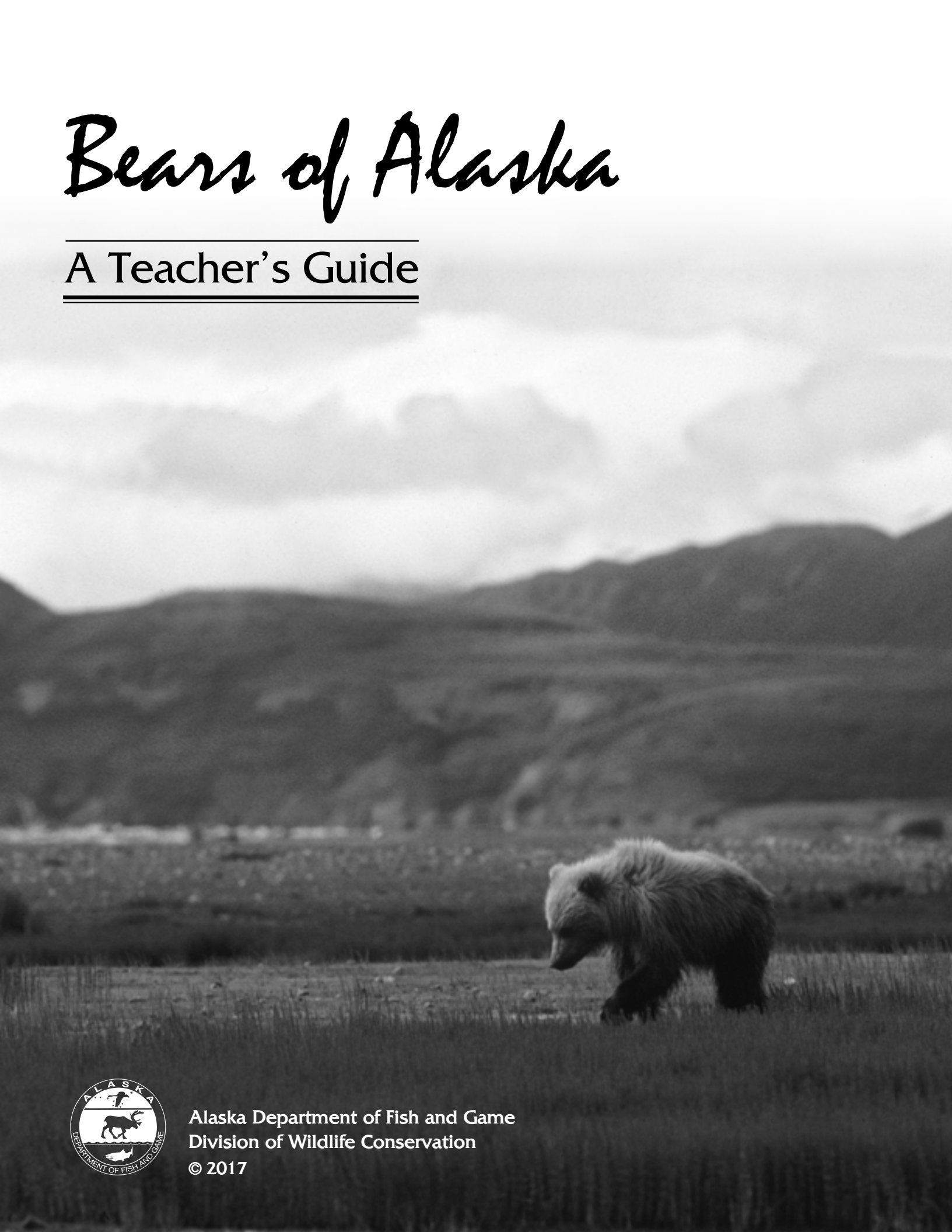
# Bears of Alaska

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## A Teacher's Guide

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Alaska Department of Fish and Game  
Division of Wildlife Conservation

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# Bears of Alaska

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## A Teacher's Guide

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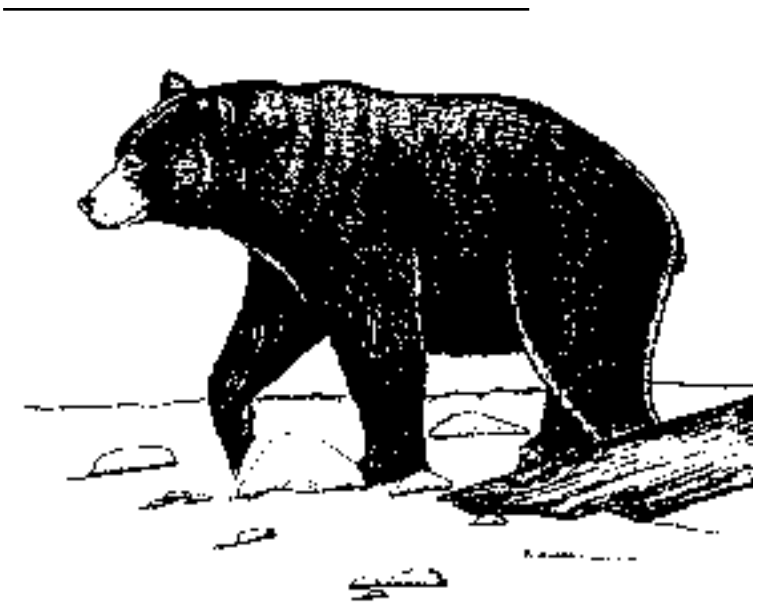
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# Bears of Alaska

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## A Teacher's Guide

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# Introduction

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## We live with bears...

Alaska is special for many reasons, one being that all three species of North America's bears flourish here. Living among bears is part of life in most parts of Alaska. Because of that, we have an obligation to teach our children a healthy respect for these wild animals and how to be safe around them. Think of it this way – children who live in parts of the world prone to earthquakes should know how to safely respond if the ground begins to rattle and shake. The same is true for bear safety. Alaskan children need to learn how to avoid attracting bears to neighborhoods, homes, cabins and campsites. They also need to learn tips for reducing the chance of a bear encounter when traveling in bear country, and how best to respond if they do see a bear. Ideally, they would also be knowledgeable about the biology and natural history of bears, and the important role that bears play in our northern ecosystems.

This teaching guide, “Bears of Alaska,” is intended for teachers, informal educators and even for parents, grandparents or other caregivers – anyone who is willing to take the time to teach children about bears and bear safety. The lessons and activities in this unit span disciplines and age ranges, from K-12, and were developed specifically for Alaska, or were borrowed from successful bear curricula developed in other regions. Remember, you don't need to be a bear expert to teach about bears – you just need to be willing to learn and have a desire to share your knowledge. This guide should help you achieve that goal.

## Place-based and STEM learning

We all know that when the subject is something students can relate to, the learning is often deeper and more meaningful. Bears are the perfect topic for place-based learning for Alaskan students. Because most of our communities are located in bear habitat, nearly every Alaskan has had an experience with bears, or has at least heard bear stories from friends and relatives. This unit places an emphasis on place-based learning, as well as STEM (science, technology, engineering and math) lessons.

We hope you enjoy learning and teaching about bears. Discover more wildlife teaching resources by visiting [www.adfg.alaska.gov](http://www.adfg.alaska.gov) and clicking on the “Education” tab.

## REMINDER:

In some Alaska Native cultures, it's inappropriate for women and girls to talk about bears. If uncertain, you may want to check with elders or others in your community before presenting or teaching lessons from this guide.





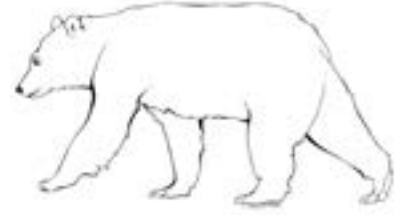
# Section 1: Bear Biology and Natural History



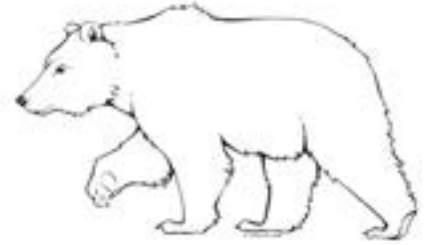
# Section 1: About Bears

## Physical Characteristics

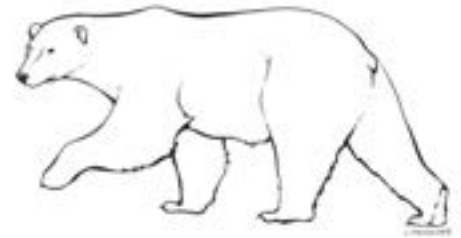
**Black Bears:** Black bears are on average the smallest of the three bear species in Alaska, with a straight facial profile, and shorter, dark-colored curved claws. Unlike brown bears, they lack a prominent shoulder hump. They average 4-6 feet in length. Males weigh between 150-400 pounds and females weigh between 125-250 pounds. Black bears are typically, but not always, black in color. They can sometimes be brown, or even bluish-gray; some bears have a white chest patch.



**Brown Bears:** Usually larger than black bears, brown bears have a prominent shoulder hump, less prominent ears than black bears and longer front claws specialized for digging. They average 7-9 feet in length. Males weigh between 400-1,500 pounds; females weigh between 200-850 pounds. Coastal brown bears and Kodiak brown bears tend to be bigger than bears that live inland because they have access to large quantities of fish to feed on. Brown bears can be a wide range of colors, from dark brown, red, blonde or even black. Silver-tipped hairs can give them a “grizzled” appearance.



**Polar Bears:** Polar bears are large and streamlined, with a long neck, smaller ears compared to other bears, and large feet. They are on average the largest of the three Alaska bear species. Polar bears are considered marine mammals. They average 8-10 feet in length; males weigh 600-1200 pounds, females weigh 400-700 pounds. While polar bears' fur appears to be white or yellowish, its fur is actually transparent. It appears white because it reflects visible light. Polar bears' fur is very dense and water repellent.



## Bear Home Ranges and Population Status

**Black Bears:** Black bears occur in most of the forested areas of the state. They are not found north of the Brooks Range, on the Yukon-Kuskokwim Delta, on the Seward Peninsula, or on a number of large islands in the Gulf of Alaska. The black bear population in Alaska is estimated at about 100,000.

**Brown Bears:** Brown bears occur throughout Alaska except on the islands south of Frederick Sound in southeast Alaska, west of Unimak in the Aleutian Chain and the Bering Sea islands. There are approximately 32,000 brown bears in Alaska.

**Polar Bears:** Polar bears are found throughout the northern polar region. During the summer they are mostly found around the edge of the pack ice in the Arctic Ocean and Chukchi Sea. In winter they have been found as far south as the Kuskokwim Delta. The polar bear population is estimated at about 900 bears in the Southern Beaufort Sea. The size of the Bering/Chukchi Sea population is unknown.

## Diet

Bears are omnivores, which means that they eat plants and animals. Bears are usually opportunistic in their feeding habits; they often attempt to eat anything that looks or smells like it might be edible. Contrary to what many people think, many bears are largely vegetarian- up to 90 percent of a black or brown bears' diet is made up of plants, and much of the meat that they do eat is scavenged from carrion (dead or decaying flesh). Bears eat berries, roots, grasses and insects, supplementing their diet with fish and meat when it is available. However, some bears that live close to salmon streams, eat large quantities of fish when available. Bears who have access to salmon streams typically grow much larger than other bears who don't have access to fish.

Polar bears are different in that their diet is almost entirely meat. Their main prey is ringed seals, but they also eat bearded seals, walrus, whale carcasses. If other food is not available, they will eat small mammals, bird eggs, and vegetation.

## Physical Adaptations

**Smell:** Bears depend on their acute sense of smell for information about the world around them. A bear's sense of smell is estimated to be about seven times greater than even that of a dog's. Bears can smell food from over a mile away. Some accounts suggest that bears follow their noses more than twice that distance.

**Hearing:** A bear's hearing ability is excellent, and like dogs, bears hear high pitches, exceeding human frequency, range and sensitivity.

**Eyesight:** Even though bear eyesight is far less developed than their sense of smell, it is a myth that they cannot see well. Bears see in color and have good vision, similar to humans.

**Speed:** Bears are capable of running incredibly fast; they can run more than 60 kilometers an hour (37 mph or 50 feet per second) – that's twice as fast as an Olympic sprinter. In fact, over a short distance a bear can outrun a race horse. A common myth is that bears cannot run well downhill. This is not true. They can run fast over any terrain, uphill or downhill.

**Swimming:** All bears are strong swimmers. Polar bears in particular are known for their swimming ability. One polar bear was once recorded swimming for nine days straight, traveling 426 miles.



## Social Structure, Communication and Behavior

**Social organization:** Bears are generally solitary except for maternal groups, siblings, or during mating. Despite this solitary behavior, bears maintain a social hierarchy. Large males usually rank at the top, while newly independent juveniles are at the bottom. Those high in the pecking order often have first access to preferred feeding sites and mates. Bears may tolerate other bears, other animals such as wolves, or even humans in certain situations. The family structure consists of mothers with cubs; male bears are not involved in raising cubs, and can be a threat to cub safety. Mother bears, especially brown bears, are fiercely protective of their offspring. Bears are not territorial but do have home ranges, which can overlap with another bear's range. Bears do not defend their home range, but will maintain and defend their own personal space. Bears may gather in large groups near a plentiful food source, such as a salmon stream or at a site with whale carrion.

**Communication:** Bears communicate using body language, sounds and smells. Bears usually try to avoid confrontations with each other, but they do fight with other bears. Bears do a lot of body posturing to intimidate other bears. They can also become physical with other bears through biting, swatting or fighting. Studying how bears communicate with each other can help inform human-bear interactions.

**Individual behavior:** As with humans, bears can exhibit unique personalities and have different life experiences. They are also highly intelligent and curious. While it's true that bears are more predictable in their behavior than unpredictable, it's important to keep those individual differences in mind. Not all bears will react in the same way under the same circumstances.

**Hibernation:** Most brown and black bears and pregnant female polar bears hibernate through the winter in order to adapt to seasonal shortages of food. Hibernation in bears is different than in other "true" hibernators like bats or ground squirrels in which the animal's body temperature is many degrees below normal and they sleep continuously throughout the whole winter. When bears hibernate, their body temperature and metabolic rate is only slightly reduced and the bear may awaken during periods of warm weather and move around outside of its den. While in the den, the bears do not eat, drink, urinate or defecate. Denning length differs by region depending on the climate and food availability.

**Life Span:** It can be difficult to measure the age of bears in the wild, but the typical life span of all three bear species is about 20-25 years. The oldest bear ever recorded in Alaska was a brown bear that lived for 39 years.

## Reproduction

All three species of bears reach sexual maturity between 3-6 years of age. Black and brown mate in June and July while polar bears mate a few months earlier, between March and May. After mating and fertilization, bear embryos undergo an unusual step called delayed implantation. This means that the blastocyst, a pre-embryonic cluster of cells developing from a fertilized egg, will remain unattached in the mother's uterus for several months as she bulks up, preparing for winter. If the mother is healthy and gains enough weight to support herself and her cubs through the winter, the blastocyst will then implant itself into the wall of the uterus in the fall.

Bear cubs are born mid-winter, while their mothers are hibernating. Bears typically have two cubs in a litter, but can have up to five at a time. The cubs are born blind and nearly hairless and weigh between 1-2 pounds. They must stay in the den with the mother, feeding on her milk, for several months. When they emerge from the den in the spring, they have grown considerably. Black and brown bear cubs weigh between 10-15 pounds when they leave the den; polar bear cubs are larger weighing approximately 20 pounds.



Black bear inside a den in the cavity of a cottonwood tree. ADF&G biologists placed a GPS collar and ear tag on this female bear in 2006, and were able to track her movements over a year-long period. She denned up in the early fall and emerged from the den in April with two cubs.



# Section 1: Activities

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1. What Bear Goes Where?
2. Bears in Winter
3. Bearly Enough for Winter
4. How Many Bears Can Live in this Forest? (Preschool-Grade 1)
5. How Many Bears Can Live in this Forest? (Grades 3-8)
6. Bear Talk







# What Bear Goes Where?

Adapted from Alaska Project WILD  
Early Childhood Curriculum

## Objectives

Students will recognize that animals are adapted to live in different environments, based on the example of three different kinds of Alaska Bears.

## Background

Alaska is the only state that boasts the presence of three bear species: brown bear, black bear, and polar bear.

Black bears live in a variety of habitats from forests to brush. They eat mostly roots, berries, rodents, and fish. They may also kill larger animals (deer, etc.) for food. Coloration varies greatly, and black bears can be black, cinnamon, bluish, and even white. Typically, the black bear is the smallest of Alaska's three bears. They have a straight facial profile which makes a line to the tip of the nose.

Brown bears are also known as grizzly bears. In Alaska, brown bears living in Interior are commonly referred to as "grizzlies," whereas those living near the coast are "coastal brown bears." The coastal browns tend to be larger than the Interior grizzlies, due to the richness and abundance of food, especially salmon. Brown bears are very adaptable and like humans, consume a wide variety of foods. Common foods include salmon, berries, grasses, sedges, cow parsnip, ground squirrels, carrion (dead or decaying flesh), and roots. In many parts of Alaska, brown bears prey on moose and caribou, especially newborns.

Polar bears have longer necks, and smaller heads and ears compared to other bears. Polar bears have black skin to help absorb heat from the sun. Their fur appears white or yellowish and is made of water repellent guard hairs with a thick undercoat. They have large feet to help them swim and walk on thin ice. The bottoms of their feet are nearly covered in fur. Ringed seals are the main prey of polar bears. Bears capture seals by waiting at their

## What Bear Goes Where?

**Grade Level:** K-2  
**Subjects:** Science  
**Skills:** Analyzing, Comparing, Describing, Identifying, Inferring, Observing  
**Duration:** 30 minutes  
**Group Size:** Individual or small teams  
**Setting:** Indoors or outdoors  
**Vocabulary:** habitat, adaptation, black bear, brown bear, polar bear

breathing holes. They may also hunt seals that are resting on the ice or they break into seal dens, called lairs, made in the snow and capture females or pups. Polar bears also eat bearded seals, walrus, and beluga whales. Polar bears will feed on whale, walrus, and seal carcasses. When other food is not available, they will eat small mammals, bird eggs and vegetation.

## Materials

*Alaska's Three Bears* by Shannon Cartwright and Shelley Gill

- Bear skulls and hides – brown, black, and polar (check out the bear kit through ADF&G offices)
- 3 sheets of poster paper
- Copies of brown, black, and polar bear images on page 16 and 17, as well as habitat components for each bear. See end of activity for support materials.

## Procedures

**BEFORE CLASS:** make copies of polar bear, black bear and brown bear illustrations.

Reproduce the table in the support materials section on the board or on a sheet of paper large enough to fill in as a group.

## INDOOR PROCEDURE:

1. Read *Alaska's Three Bears* by Shelly Gill and Shannon Cartwright.
2. Show students pictures of the three different bear species or show them the hides from the bear kit. Discuss similarities and differences in the bears including color, size, shape and length of claws, size of the feet.
3. Questions to ask: Why do brown bears have such long claws? (For digging and capturing prey). Why are black bear claws shorter and more curved? (For climbing trees).
4. Discuss how the different characteristics (adaptations) allow each type of bear to live in different habitats: tundra, forest, sea ice.
5. Fill in the table as a group as you talk about each habitat component.
6. Place a picture of each bear species in the center of a large sheet of paper, one per page.
7. Divide students into three groups. Have each group draw the habitat components around their bear. Students will learn that brown and black bears share similar habitats.
8. Display the posters and discuss what they learned about bears and where they live. Can polar bears live in warm places without sea ice? Can a black bear live without a forest?

## OUTDOOR PROCEDURE:

After reading and discussing the habitat needs of the three bear species, take the students outside or on a field trip. Ask students to look around them. What type of bear might live here? Why? What type of food is around for bears to eat? Do they have enough space to live there without people, buildings or roads? Explain that "space" includes more than a big place. It includes everything that meets the needs of the bear that lives there.

## MAKE AND TAKE:

Give students extra bear pictures and let them make a mini-poster to take home and decorate with family.

## Evaluation

- Show students pictures of wild places and ask them which bear could live there and why.
- Hold up pictures that represent different elements of habitat and ask the students which bear would use the elements.
- Do bears and people live in the same area and use the same food water, shelter and space?

## Extensions

### Community Involvement

- Invite parents or community members to bring in bear photos, skulls, hides and track impressions (plaster) of bears.
- Read to students, or share bear related stories. (Prior to the telling, ensure that the stories are appropriate for your students and do not unnecessarily scare them.)

## Curriculum Connections

*Alaska's Three Bears* by Shannon Cartwright and Shelley Gill

*Bears in the Berry Patch* by Rebecca Irvin Clement

For additional information of Alaska's bear species visit [www.adfg.alaska.gov](http://www.adfg.alaska.gov) > Species > Animals > Mammals > Bear

ADF&G's kits including: Furs & Skulls Kit visit [www.adfg.alaska.gov](http://www.adfg.alaska.gov) > Education > For Educators > Teacher Resources > Teaching Kits

# Support Materials

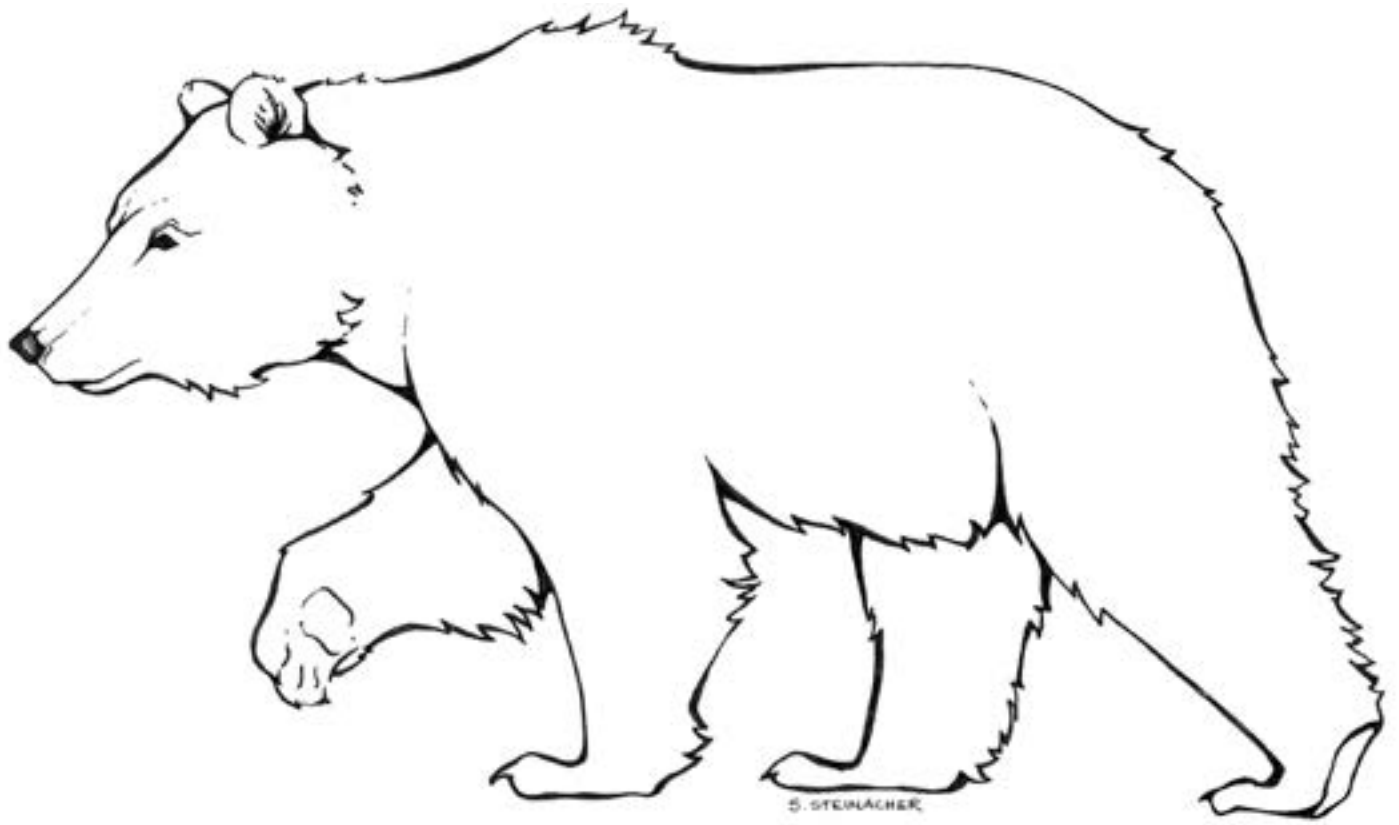
Example:

	Food	Water	Shelter	Space
<b>Brown Bear</b>	Salmon	River	High bushes	Forest or tundra
<b>Black Bear</b>	Berries	Stream	Trees	Forest
<b>Polar Bear</b>	Seal	From the food they eat and from snow	Snow cave or mound of snow	Sea ice

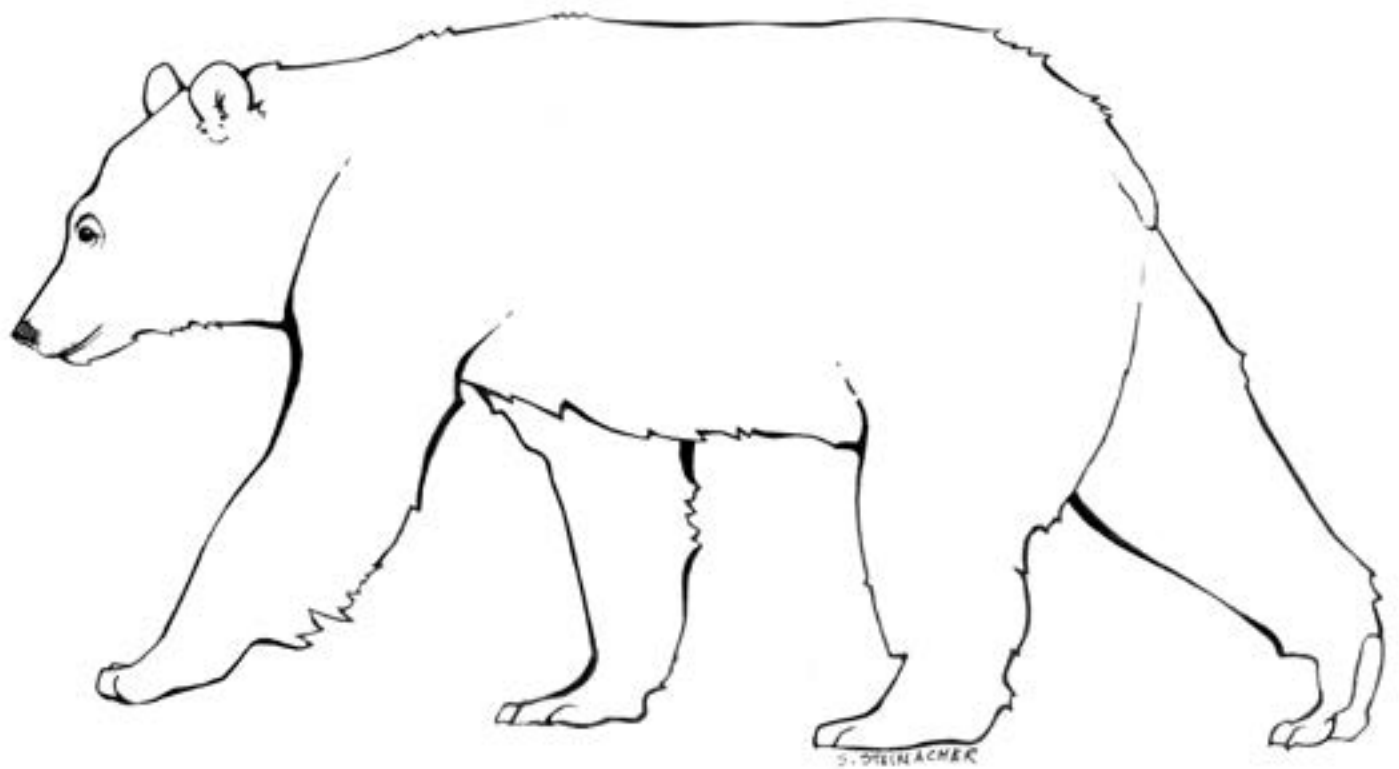


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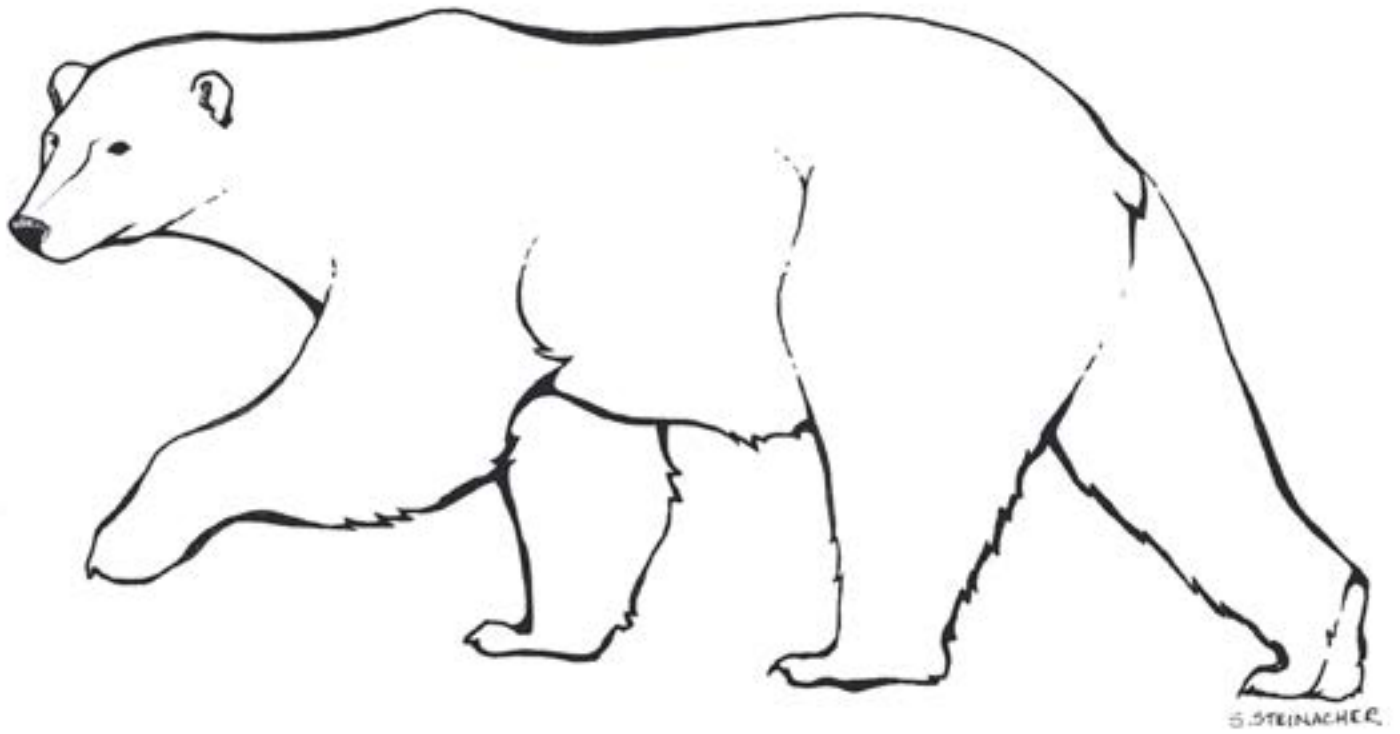
	Food	Water	Shelter	Space
<b>Brown Bear</b>				
<b>Black Bear</b>				
<b>Polar Bear</b>				



**Brown Bear**



**Black Bear**



**Polar Bear**



# Bears in Winter

Procedures section adapted from Alaska Project WILD  
Early Childhood Curriculum



## Bears in Winter

**Grade Level:** K-2

**Subjects:** Science, art

**Skills:** Analyzing, Comparing, Describing, Identifying, Inferring, Observing

**Duration:** 30 minutes

**Group Size:** Individual or small teams

**Setting:** Indoors or outdoors

**Vocabulary:** hibernate, torpor

## Objectives

Students create animal hibernation spots for nap time after listening to a story about hibernation. In fall or winter, students explore outside looking for good hibernation spots for Alaska animals.

## Background

As with brown bears, black bears spend the winter months in a state of hibernation known as torpor. Their body temperatures drop, their metabolic rate is reduced, and they sleep for long periods. Bears enter this dormancy period in the fall, after most food items become hard to find. They emerge in the spring when food is again available. Occasionally, in the more southern ranges, bears will emerge from their dens during winter. In the northern part of their range, bears may be dormant for as long as seven to eight months. Females with cubs usually emerge later than lone bears. Dens may be found from sea level to alpine areas. They may be located in rock cavities, hollow trees, or self-made excavations.

## Materials

Preparation: Create dens using tables with sheets, or cardboard large enough for children to sit in.

## Procedures

Special Note: We recommend doing this activity in a specific order. The order demonstrates the sleep cycle of bears: searching for a den, hibernating, walking, and eating.

### Indoor/Outdoor Procedure:

1. Discuss with children that hibernation means “to take a long nap”. Torpor means to wake up from time to time during winter.
2. Discuss Alaska hibernating animals and have pictures available to show students. For example: (1) Hoary and Alaska Marmots make their homes at the base of talus slopes. Their burrows may be up to 30 feet long with a nest of grass. In winter; they plug the hole with a mixture of dirt, vegetation, and feces. (2) Black and brown bears sleep, waking from time to time (torpor) in rock cavities, hollow trees, and self-made holes. (3) Wood and spotted frogs hibernate in shallow bowls formed by last year’s plant life. They spread more plant life on top. Snow helps insulate them from the winter.
3. Discuss different spaces that animals use to sleep the winter away. (See examples above.)
4. Take an outdoor hike around the school and have children identify possible spots for different animals to hibernate.
5. Have students create hibernating places using nooks, tables and sheets.

6. Read *Every Autumn Comes the Bear* or other books about hibernation as children hibernate.
7. Spaces can be designated for different animals. Let children switch places each day.

## Review

1. After someone in your family eats a big dinner, does he or she take a nap?
2. When are wild animals' naps over?
3. Is it easier to fall asleep when you are really hungry or really full?
4. After a long night's sleep, do you wake up hungry?
5. Ask questions from the story.

## Extensions

**Bear Den:** Have students decorate their own bear den (envelope) using paints, crayons, etc. Label each envelope for the student, for example: "Jennifer's Bear Den." Send them home with the children. For fun, enclose a coupon in each student's bear den that is good for one big bear hug for parents at home!

**Snack:** Seeds and Berries

### Community Involvement:

- Invite parents and community members to read stories to children before "hibernation" nap time.
- Have a community member show pictures of types of hibernating animals in Alaska.

## Curriculum Connections

### Books:

*Every Autumn Comes the Bear* by Jim Amosky, Putnam Publishing.

*Animals in Winter* by Henrietta Bancroft.

*Hibernation* by Margaret Hall.

*What Do Animals Do in Winter?* (Discovery Readers Series).

*How Animals Survive the Cold* by Melvin Berger.









# Bearly Enough for Winter

Procedures section adapted from Wild About Bears!  
Habitat Conservation Trust Foundation

## Objectives

Students will be able to apply arithmetic operations and illustrate their use in solving problems, describe the behavior of bears in their habitat, analyze how organisms adapt to their environment and assess some survival needs of bears.

## Background

Buried beneath the snow, the food that bears rely on for survival is not available in wintertime. Bears have adapted to this problem by developing the ability to go into hibernation. However, in order to survive the period in which food is not available, bears must store up a lot of body fat beforehand. They then live off their stored fat supply during the winter months and can lose as much as 20-40% of their weight during denning.

Bears go into a hyper feeding mode in the fall called hyperphagia. During this time, bears can gain as much as five pounds a day. Bears usually enter their dens in October or November and leave them in April or May. During much of this time they are sleeping, waking only to stretch and move slowly about then den in a kind of sleepwalk that prevents their muscles from atrophying due to inactivity.

## Materials

- “Bearly Enough for Winter” worksheets
- Calculators
- Weight scales

## Procedures

1. Ask students what challenges a bear would face in surviving the winter. What would happen to the temperature? How would the food and water resources that the bear depends on be

## Bearly Enough for Winter

**Grade Level:** 4-7

**Subjects:** Mathematics, science

**Skills:** Addition, calculating, percentages, comparison, subtraction

**Duration:** 30 minutes

**Group Size:** Any

**Setting:** Indoors or outdoors

**Vocabulary:** Denning, hibernation, hyperphagia

affected? How does light changes in wintertime?

2. Explain to students that bears must put on a lot of weight to survive the winter and in order to do so they enter into a behavior called hyperphagia. Ask students what they think this behavior is.
3. Define hyperphagia for the students and tell them how much weight a bear can gain each day prior to hibernation and how much weight is lost during hibernation (see background section).
4. Explain to students that they will be comparing their own body weight to that of a bear in order to gain a better understanding of just how this increase in weight affects a bear’s body.
5. Hand out worksheets. Have students weight themselves and record their weight. Students then perform the calculations. With younger students it may be preferable to perform the calculations with a five-pound-unit to avoid decimal fractions. It may also be necessary to explain how to calculate 40% of a student’s body weight.

## Evaluation

Gather student worksheets and assess for: correct application of mathematical operations, reasonable solutions to the problems posed, understanding of how bears behave in preparation for winter, and an understanding of how bears have adapted to their environment.

## Bearly Enough for Winter Worksheet (1)

Write your answer to the following questions in the table below. Show your calculations.

<p>If bears sleep 22 hours a day for 5 months, how many hours of sleep do they get?</p>	
<p>If you sleep 8 hours a night for 5 months, how many hours of sleep do you get?</p>	
<p>How many more hours does a bear sleep than you over 5 months?</p>	

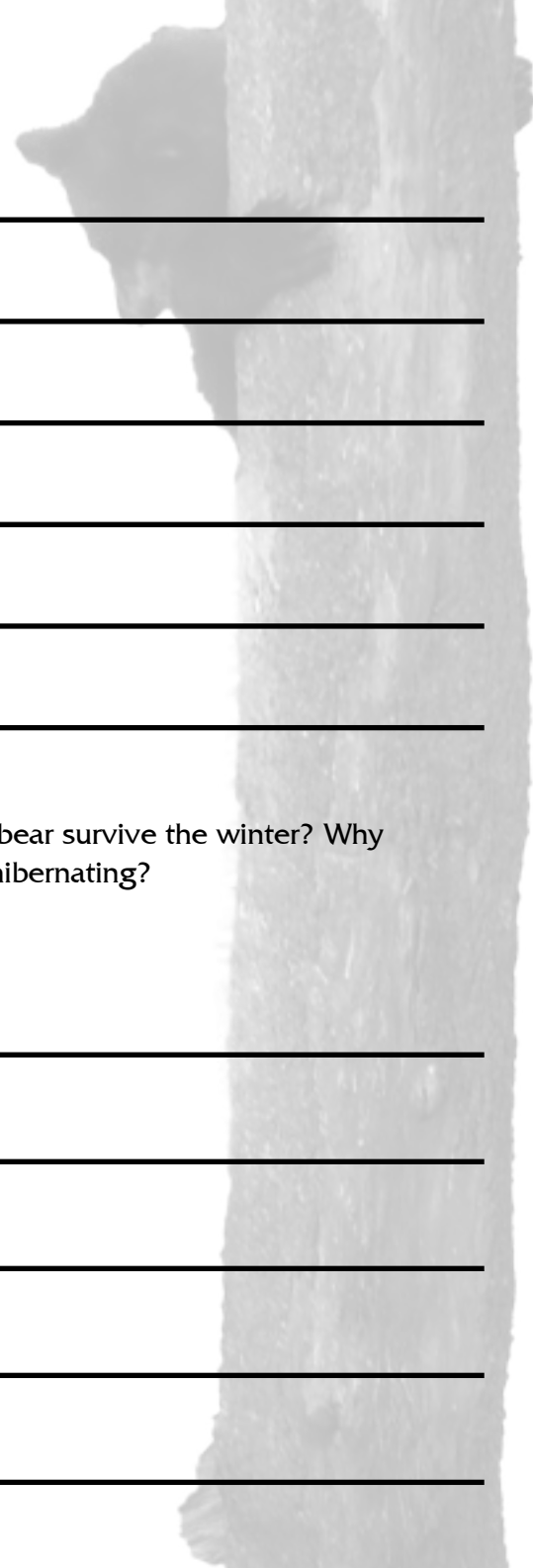
A bear can gain 5 pounds each day during hyperphagia while preparing for hibernation. What would happen if you did the same? Write your answers to the following questions in the table below.

<p>How much do you weigh?</p>	
<p>How much would you weigh if you gained 5 pounds per day for 3 weeks?</p>	
<p>Using your current body weight, how much would you weigh if you lost 40% of your body mass?</p>	

Name \_\_\_\_\_

## Bearly Enough for Winter Worksheet (2)

Write a paragraph about how a bear prepares for winter?



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How does gaining a large amount of weight before hibernation help a bear survive the winter? Why doesn't the bear stay awake and hunt animals or eat plants instead of hibernating?

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# How Many Bears Can Live in this Forest?

For early learners, adapted from ADF&G Project WILD Early Childhood Curriculum

## Objectives

Students will discover that black bears eat a variety of foods (bears are omnivores) and need to have enough food to survive.

## Methods

Students will become “bears” to look for some of the foods that bears eat during this physically involved activity.

## Background

Black bears and brown bears are quiet, shy animals that can be found throughout much of Alaska. These bears may be black, brown, cinnamon, blonde, or blue-grey color.

Black bears and brown bears are omnivores, which means they will eat both plant and animal matter. Most of their diet is made up of a variety of plant parts like leaves, berries and roots.

What bears eat depends on where they live and what is available at that time of year. In early spring, they eat grasses, shoots, and other greens. They will also eat insects, maggots, and sometimes the carcasses of dead deer or other animals. In late spring and early summer, they eat honey, berries, and leafy plants, as well as ants, wasps and grubs. Occasionally they will kill and eat small animals such as mice, squirrels, fish and frogs and larger ones such as moose calves and deer fawns. In late summer and early fall, they eat the returning salmon and remaining berries. At that time of year, bears must add lots of fat to their bodies so that they can make it through the winter months without eating.

In order to survive, bears, just like all wild animals, must have all their needs met by their habitat. They

## How Many Bears Can Live in this Forest?

**Grade level:** Preschool-1st Grade

**Subjects:** Science

**Skills:** Physical, cognitive, communication, creativity

**Duration:** 30 minutes

**Group Size:** Entire Class

**Setting:** Indoors or Outdoors

**Vocabulary:** Habitat, omnivores

require large areas with lots of different foods. They also need streams, ponds, or other sources of water for drinking and cooling. In winter, bears need a den, which may be a hollowed-out tree cavity, a hole under a log or rock, a small cave or culvert, or simply a shallow depression in the ground.

## Materials

- Bear food cards (at least one set per student)
- Small brown paper bags (lunch bags)
- Bear outlines
- Crayons
- Scissors
- Glue sticks
- One two-inch square of blue construction paper per number of students.

## Preparation

Copy and cut out pictures of the food a black bear might eat. You could glue the images onto colored paper in the following manner but it isn't necessary: purple = berries; blue = water; yellow = insects; red/brown = meat; green = plants.

Copy and cut out the bear outlines. Paste the outlines onto the brown paper bags. These can be used to hold the food and also as puppets.

## Procedure

### Indoors or outdoors:

1. Read one of the books listed to introduce students to the concept of habitat. Explain that black bears need cover so they can hide, sleep, and raise their cubs. Each bear has its own home range or space, and usually stays there. When food and water are scarce, life is harder for bears.
2. Hand out the bear puppets. Students can color them now or later.
3. Scatter the food around a large open area, referred to as the “forest.”
4. Have students form a circle around the “forest” area. Each student will place his or her paper bag down on the ground. Place a rock or anchor of some kind on the paper bag if you are outdoors.
5. Explain to the students that the cards represent bear food. Teach students the word “omnivore” (an animal that eats meat and plants). Explain that each color card is a different kind of food and that black bears like to eat a lot (several pounds per day)!
6. Have students walk in the “forest” to gather one piece of food at a time. They must bring their food back to their “bear bellies” to show the time it takes to eat and digest their food. Then they can go out again for another piece of food and continue until all the food is collected.
7. Have students collect the food cards until all food is gone. Did each get a variety of foods? Did each get the same amount of food? Did everyone get water? What might happen if a bear did not get water to drink? Will a bear that gathers enough of each kind of food be healthy? What happens to bears that do not have enough food? Continue discussion about the needs of a bear including food, shelter (cover), water and space.

## Evaluation

### How Many Bears Review:

1. What different kinds of food do bears eat?
2. What does “omnivore” mean? (An “omnivore” eats, both vegetation and meat)
3. People eat different types of foods? What food do both bears and students eat?
4. How many students are “omnivores”?
5. Are all animals “omnivores”? (Ask students to name animals they know and what they eat.)

## Extensions

### Community Involvement

- Invite parents in to read to the students or help with the activity.
- Invite a community member in to share stories about berry picking and bears.
- Borrow skull kits from your local ADF&G office and have students compare the teeth of a carnivore, herbivore and omnivore.

## Curriculum Connections

### Books:

*Bears for Kids* by Jeff Fair. Northwood Press.

A book about black bears with dozens of photographs. Reading level is high for this age group but a worthwhile addition.

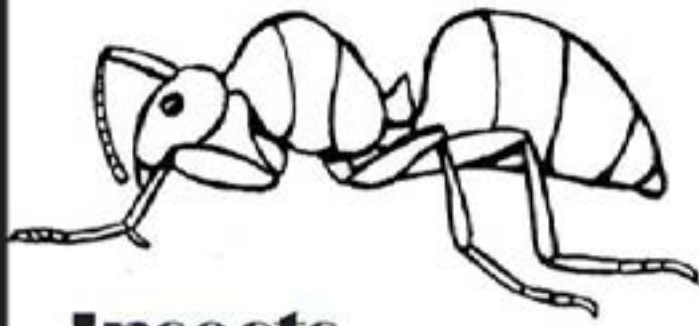
*Alaska's Three Bears* by Shelly Gil.

Teaches students about habitat for polar, brown and black bears.

*Bears in the Berry Patch* by Rebecca Irvin Clement. Publication Consultants

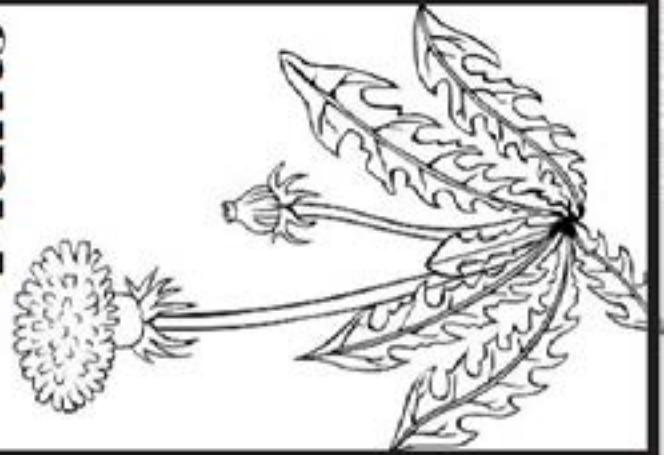
*The Alaska Adventure Bears Series*: A fun, educational story, complete with an Adventure Bear song. Bears in the berry patch, looking for a snack. Bears in the berry patch, big, brown and fat. Brown bears, black bears, polar bears, too. Bears sure do like snacks, how about you?



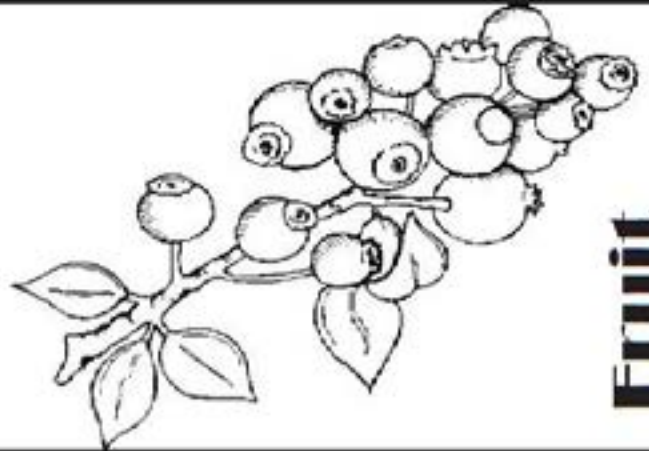


**Insects**

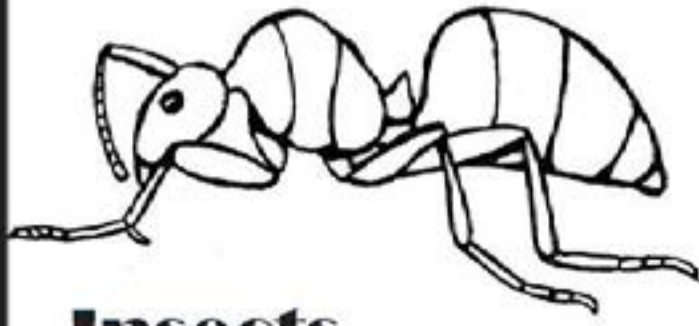
**Plants**



**Meat**

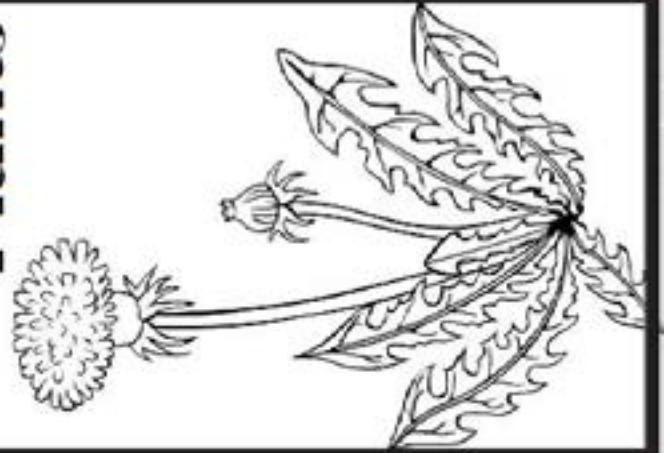


**Fruit**

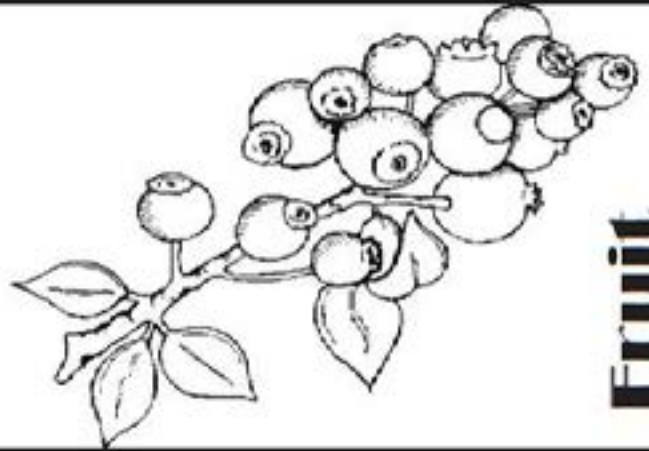


**Insects**

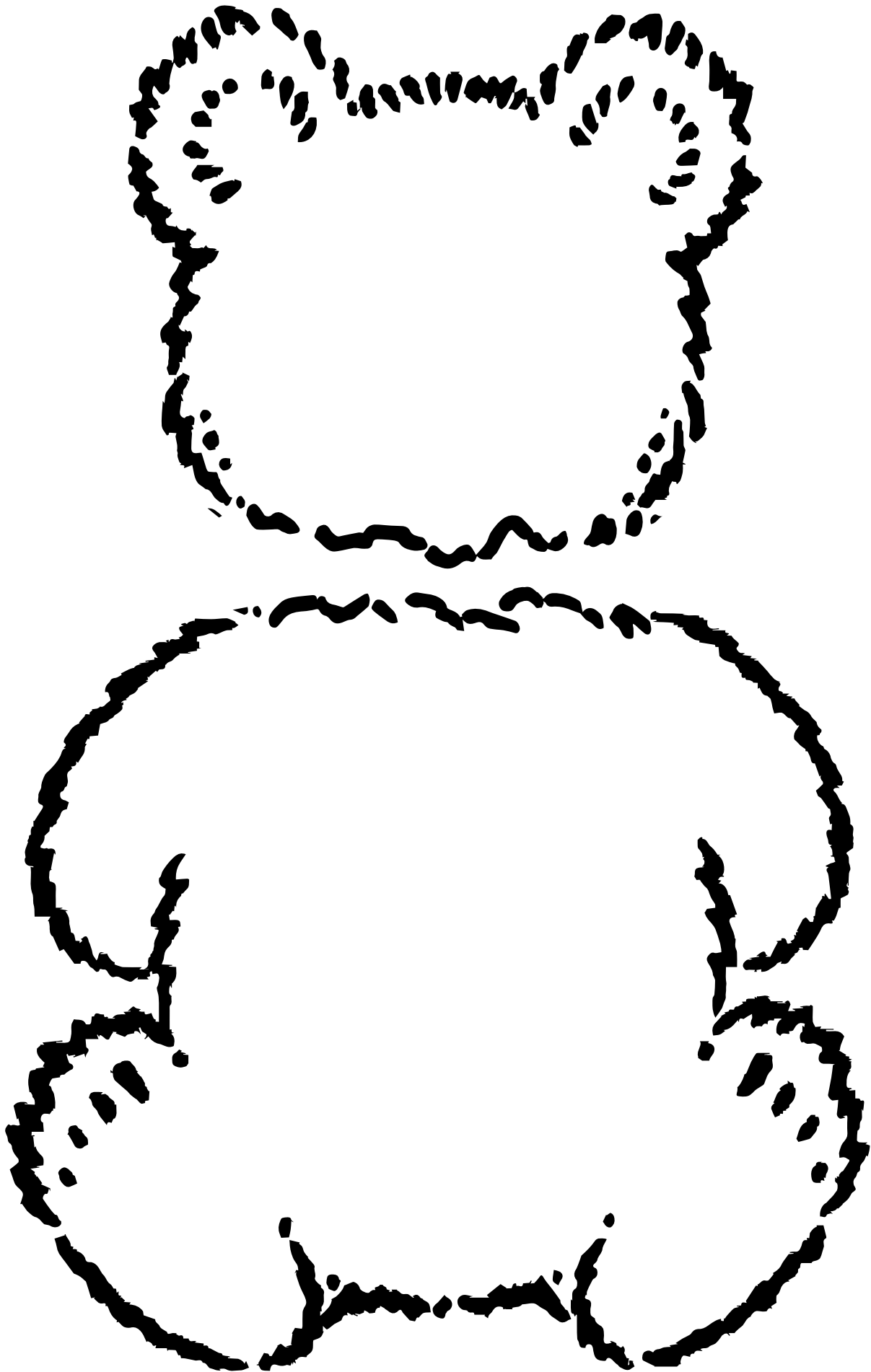
**Plants**



**Meat**



**Fruit**







# How Many Bears Can Live in this Forest?

Activity variation for grades 3-8  
Adapted from Alaska Wildlife Curriculum  
*Alaska's Wildlife for the Future*, Volume 5

## Objectives

Student will define carrying capacity. Students will describe the importance of carrying capacity for wildlife and people.

## Methods

Students will do an activity indoors or outdoors where they role-play that they are bears and must collect enough food tokens to survive. Students will learn that the number of bears that live in a forest depends on the amount, availability and location of food.

## Background

This activity illustrates the importance of suitable habitat for wildlife, and demonstrates the consequences for a population of bears if one or more habitat components become relatively scarce. When any element or factor in a habitat is not natural to that area or exceeds the tolerance range for an animal or population, it directly affects the well-being of the animal(s) and may result in death or population reduction. This factor “limits” the animal or population. Limiting factors may include habitat components such as food, water, shelter and appropriate space as well as life history parameters such as disease, predation and climatic conditions. Limiting factors may also be related to human activity such as development, pollution and hunting. Populations tend to increase in size until limited by one or more of these factors.

Brown bear habitat limits brown bear populations, especially through the influences of shelter, food, supply and the social tolerances of the animal. Brown bears need cover—for feeding, hiding, bedding, traveling, raising cubs and denning.

## How Many Bears Can Live in this Forest?

**Grade level:** 3-8

**Skills:** Mathematics, physical education, science, social studies

**Duration:** 45-50 minutes

**Group Size:** Entire Class

**Setting:** Indoors or Outdoors

**Vocabulary:** Carrying capacity, cover, habitat, limiting factors, omnivore, shelter, cover

When viable habitat or space is limited, adult bears will kill young bears or run them out of the area. These young bears must keep moving around either until they die or until they find an area vacated by the death of another bear.

Competition becomes more intense when food supplies are reduced by factors such as climate fluctuations. Young bears may be forced from the area by more aggressive bears. Even adult bears might temporarily move to seldom-used areas of their home range, sometimes moving many miles away. They must live on what food is available in the area. These individuals may become thin and in poor condition for winter hibernation.

Although all possible scenarios are not covered in this activity, students will quickly grasp the concept of “limiting factors”—habitat components affecting the survival of an animal or restricting the numbers or range of an animal population.



## Materials

- Construction paper (2-3 sheets of five colors) or an equal amount of light poster board
- One black felt pen
- One envelope per student
- Pencils
- One blindfold

## Preparation

BEFORE CLASS: Print the food token cards provided on ADF&G's website, Bears of Alaska-Teacher's Guide page. Print on colored paper or paste food tokens to construction paper as follows:

Orange for roots: 30 pieces "R-2".

Purple for berries: five pieces "B-26" 25 pieces "B-10".

Yellow for insects: five pieces "I-11", 25 pieces "I-5".

Red for meat: five pieces "M-14", 25 pieces "M-6".

Green for plants: five pieces "P-22", 25 pieces "P-10".

## Procedure

1. IN CLASS: Ask students why there are not millions of bears nearby. Brainstorm limiting factors that keep wildlife populations in check (*food, water, shelter (cover), space, predators, disease etc.*). Tell students that carrying capacity may be defined as the number of plants or animals of a given species that a habitat can support. It is the largest population a unit of habitat can support on a year-round basis, or during the most critical period.
2. Tell the students that they will become bears to focus on food as a limiting factor.
3. Hand out envelopes. Have students write their name on the envelope. They will put the food they "eat" in these envelopes.
4. INDOOR OR OUTDOOR GAME PLAY: In a fairly large open area or classroom, scatter the colored "food" pieces of paper. (*There should be less than 60 pounds of food per student so that there is not enough food in the area for all the "bears to survive."*) Have the students place their envelopes on the ground (perhaps anchored with a rock) at the starting line around the perimeter of the field area, or at their desk.
5. Students stand over their envelopes on the starting line. Give them the following instructions:
  - "You are now brown bears. In this scenario, a small bear got into a tussle with a larger male bear in the bigger bear's fishing spot and the small bear was hurt. He has a broken leg." (*Assign one student as the injured bear. He must hunt by hopping on one leg.*)
  - "Another bear investigated a porcupine too closely and was blinded by the quills." (*Assign one student as the blind bear. They must hunt blindfolded.*)
  - The third bear is a sow with two cubs. She must gather twice as much food as other bears." (*Assign one student as sow.*)
6. Do NOT tell the students what the colors, initials, and numbers on the pieces of paper represent. Tell them only that the pieces of paper represent various kinds of bear



food. Bears are omnivores, they like a wide assortment of foods, so they should gather different colored squares.

7. Students must walk into the “forest”. When students find a colored square, they should pick it up (*one at a time*) and return it to their envelope (“stomach”) before picking up another colored square.
8. Snatching food right out from under the blind bear or the injured bear is natural, but stealing from other envelopes is impossible because the food has already been consumed and is therefore not allowed. Competitive behavior is allowed but should be under control.
9. Remind students that if bears fight (*which they seldom do*) they can become injured and unable to gather sufficient food. Out of control competitiveness can be rewarded with an injury, assigned by the teacher or removal of food to represent energy lost.
10. When all the colored squares have been gathered, students pick up their envelopes containing the food they gathered and return to class.
11. BACK IN THE CLASSROOM, explain what the colors and numbers represent. Ask each student to add up the total number of pounds of food that she or he gathered. Have them write the total on their envelope.
12. On the board, write “blind,” “injured,” and “sow with cubs.” Ask those bears how much food they ate.
13. Ask the rest of the students if they gathered more than 20, 30, 40 ... pounds of food to stand up. The last standing students are the big fat bears that went into the dens very healthy and plump. Have bears with more than 200 pounds stand up. They are the bears that survived.
14. Tell the students brown bears need at least 20 pounds of food a day so they needed to collect 200 pounds of food.
15. Ask the students to calculate a class total for all the pounds of food they gathered as bears. Divide the total by 200 pounds, an approximate amount of food needed by an adult brown bear over a 10-day period.
16. Considering the class results, how many bears could the habitat support? What percentage of the bears survived? What percentage would have survived had the food been evenly divided? In each case, what percentage would not survive? What other limiting factors would influence the survival of individual bears and populations of bears in an area?
17. Discuss what would happen to the bears that did not get 200 pounds of food. Would they all starve? How many pounds did the blind bear collect? Will it survive?
18. What about the sow with cubs? Did she get twice the amount needed to survive? What will happen to her cubs? Will she feed cubs first, or herself? Why? What would happen to her if she fed the cubs? What if she ate first? If the cubs die, can she have more cubs in the future during richer years? (The sow will eat first and the cubs will get what food, if any is left. The sow must survive; she is the key to a continued bear population. She can have more cubs in her life; only one cub needs to survive in order for the population to remain stable.)
19. Discuss the idea that a given area of brown bear habitat can only support a limited number of bears. How many bears survived in this activity? Could the carrying capacity change? Under what condition? What if we did this game with more students? Would more bears die? Can the habitat change? Discuss which aspects of the carrying capacity for this class area were realistic and which were not.
20. Conclude with a discussion that any piece of land can support only so many plants and/or animals. That is the land’s carrying capacity. Could the earth’s carrying capacity



be decreased as a result of some human activities? To what extent can individual people and societies exert a positive influence on the global environment?

## Evaluation

1. Define carrying capacity.
2. Describe some of the factors which determine carrying capacity for a species of animal.
3. Explain why carrying capacity is important for wildlife.

## Extension

### Keeping bears out of our garbage

Garbage cards are added to the pile of food cards. These cards are labeled G-50 and are a bright color. Just as with the other types of bear food, participants are not told that the G-50 cards represent garbage.

After the students have gathered all the food cards and before they count out their food, they are instructed to remove the G-50 cards and set them aside until later. Students are still not told the meaning of the cards. After they have learned about the diet of the bears and discussed carrying capacity in more detail etc, they are instructed to count up their G-50 cards.

The G50 cards represent garbage. As opportunistic feeders, the bears (participants) do not know that garbage is not safe for them. They just seek it out like any other food. However, once they learn that they can get easy food from garbage, they keep returning and become a human-food conditioned bear. Human food conditioned bears often become more aggressive around humans and cause problems.

Bears who collected three or more garbage cards are told they were killed in defense of life and property (DLP) by a nervous home owner, ADF&G, or a police officer. This news is met with great disappointment amongst the students, who

thought they collected enough food to make it through the winter, but learned they actually were shot in defense of life and property.

How can we avoid food conditioning a bear? Store garbage and pet food indoors or in bear proof containers like a metal box with a sturdy lock. Freeze smelly foods and keep it frozen until garbage day. Put away bird feeders after April 1. Install electric fencing around chicken coops and compost piles.





## Supplementary Materials

The conversion chart below can be used to calculate the number of food cards to create for your class. Remember, black and brown bear diets vary greatly by region and season, so these figures are very generalized.

If you are a brown bear living on Admiralty Island in Southeast Alaska, you might: weigh 600 pounds, have 50 sq. mile home range, eat 20 pounds a day:

- 12% Fruits and Berries
  - 3% salmonberries (*Rubus spectabilis*)
  - 2% currants (*Ribes spp.*)
  - 2% blueberries (*Vaccinium spp.*)
  - 5% devil's club berries (*Echinopanax horridum*)
- 56% Animal Matter
  - 50% salmon
  - 2% deer
  - 2% voles
  - 2% intertidal carrion
- 30% Plants
  - 25% sedges (*Carex spp.*)
  - 3% skunk cabbage (*Lysichiton americanus*)
  - 2% horsetail (*Equisetum spp.*)

If you are a brown bear living on the North Slope of the Alaska Range, you might: weigh 350 pounds, have 300–400 sq. mile home range, eat 14 pounds a day:

- 80% Plants
  - 25% horsetail (*Equisetum spp.*)
  - 25% grass
  - 25% deer cabbage (*Fauria crista galli*)
  - 5% flowers
- 16% Animal Matter
  - 6% caribou
  - 5% ground squirrels
  - 3% voles
  - 2% bees and eggs
- 2% Berries
- 2% Roots

If you are an adult male black bear living on the Kenai National Wildlife Refuge, you might: weigh 170 pounds have a 165 sq. mile home range, eat 6 pounds a day:

- 36% Fruits and Berries
  - 17% lowbush cranberry (*Vaccinium vitis-idaea*)
  - 8% devil's club berries (*Echinopanax horridum*)
  - 4% twisted stalk (*Streptopus amplexifolius*)
  - 7% misc. berries
- 35% Animal Matter
  - 14% insects
  - 11% moose
  - 3% hares
  - 3% birds
  - 2% insect larvae
  - 2% fish, small animals
- 29% Plants
  - 13% horsetail (*Equisetum spp.*)
  - 6% grass, sedge
  - 4% clover
  - 4% leaves, moss
  - 2% other flowers





# Bear Talk

Adapted from Wild About Bears!  
Habitat Conservation Trust Foundation

## Objectives

Students will be able to demonstrate an understanding of the messages bears communicate through various behaviors, recognize that humans are limited in our ability to understand bear communications, understand that personal choices and actions have consequences in bear territory, cooperate to develop role play scenarios, and demonstrate the ability to maintain focus within dramatic scenarios.

## Methods

Students role-play various bear behaviors to learn how bears communicate.

## Background

Young children frequently talk to animals and wonder why they are “not listening” — they do not yet realize that non-human animals communicate in a different way. Bears communicate with other bears and animals, including humans, through body language and vocalizations. Unfortunately, humans often do not understand these communications. People have inadvertently provoked bear attacks by failing to understand a bear communicating a warning.

For example, a mother bear with cubs that huffs and jaw pops, and then slaps the ground may be communicating that an approaching person is coming too close and making her nervous. If the person doesn't understand and stays to watch or moves even closer to see what she is doing, that could provoke a defensive attack.

The table on page 45 lists various bear behaviors and what they might mean. Remember, interpreting bear behavior is more complicated than this table suggests. In any situation there might be numerous factors that influence what

## Bear Talk

**Grade level:** 3-7  
**Subjects:** Drama, science  
**Skills:** Role play  
**Duration:** 40 minutes  
**Group Size:** Any  
**Setting:** Any  
**Vocabulary:** Body language, communication

and how a bear is communicating. Also, just like people, every bear is an individual and has its own personality and history. A particular bear may be more tolerant of humans in some circumstances, while another bear may react quite differently.

Although interpreting bear communications is not straightforward, students can learn a great deal about how wildlife communicates by role-playing behaviors. Developing awareness that animals use body language for communication is a valuable lesson in itself.

## Materials

- Photos and/or video footage of bear behavior.
- *Staying Safe in Bear Country* video- available on loan at ADF&G offices

## Procedure

1. Ask students if they can use body language to communicate a message. Give them an example such as “wink, wink, nudge, nudge” or simply nodding your head to get them started. Head shaking, waving, shooing someone away, beckoning them forward, frowning, smiling, standing with arms crossed turning your body away, showing surprise – these are all examples of non-verbal communication. If there are students in the class that are familiar with the customs of other

cultures or countries ask them if body language differs from place to place.

2. Ask students how a dog communicates with humans. How does it communicate with other dogs? With cats or squirrels?
3. Show the table of bear behaviors. Discuss each one with the class. Ask if anyone in the class has seen a bear before. Was it showing any of the behaviors on the chart?
4. Have students stand at their desks. Alternatively, move into an open space where the group can form a circle. Read out each behavior and have the students act out the behavior.
5. Divide students into groups of four and have each group develop a scene in which a bear exhibits one of the behaviors. The students may use body language and sound effects but may not use human speech. It may be necessary to provide a copy of the bear behavior chart to each group.
6. Have each group perform their scene for the rest of the class. After each scene allow the other students to describe what they think took place and/or have each group tell the story of their scene.
7. Bring participants back together for discussion at the end. Explain that these are only ideas about what bears might be communicating and that actually people know little about wildlife and animal communications. Emphasize to students that if a bear is encountered, it should always be assumed that a human presence will make the bear uncomfortable. Move away slowly and carefully then leave the area.

## Evaluation

- Cooperative effort in developing scenes
- Ability to maintain focus on the creation and presentation of the scenes
- Accurate representation of bear body language messages
- Participation in discussion throughout the activity

## Extensions

Create a narrated storyline to accompany the scenes and present them as a complete production at a school assembly. This is an excellent way to familiarize the rest of the school with bear behaviors.

Body language plays a large role in human communication. It is estimated that between 60-80% of our message is communicated through our body language. Have students discuss and write on the subject of why understanding human body language is important.

Research non-verbal communication within different cultures and compare the results with non-verbal communication in mainstream American culture.

Have students write about how pets communicate their needs and wants to their owners. What might a pet be thinking when it behaves or moves in a certain way such as wagging a tail, purring or running on a wheel.

Research the body language of other animals such as wolves, cats, or monkeys. Compare the results with the known bear behaviors. Are there similarities? Differences? Are any of the behaviors common to all the animals studied? Compare the body language of humans to that of the other animals.

Watch a film that details how to behave in bear territory. Compare what the film teaches with what was learned during the lesson.

Have students use the scenes they developed to create their own bear safety video. The video could be copied to CD and distributed through the school.



## Support Materials

Behavior	What it Might Mean
Bear is standing on back legs, moving head back and forth, and sniffing the air	The bear doesn't know what you are and is using all of its senses to try to figure it out
Bear pauses for a moment in its activity e.g. bear is feeding and pauses slightly	You're getting too close and starting to make the bear uncomfortable
Bear is moving its feet around, as if it were dancing	The bear is feeling tentative. It is unsure of the situation
A soft whuff or growl	The bear is warning you, it is quite agitated
The bear moves away	You have disturbed the bear
Huffing, blowing, or moving its jaws rapidly to click or 'pop' its teeth	The bear wants you to leave
Pawing the ground	Bear may bluff charge
Lunging toward you	Emphatically trying to motivate you to leave
Grunt	Greeting another bear or calling a cub to come along
Cub - humming	The cub is comfortable and happy. Cubs often hum when nursing or warm
Cub - whine	Usually given when approaching its mother
Cub - squall	Distressed



# Section 11: Living With Bears

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## *Coexisting with bears*

Alaska is unique because we have all three species of North American bears here, and because bear populations are generally considered to be healthy. Surveys have shown that people enjoy living among bears, but it does require some responsibility by humans to ensure that both people and bears stay safe.

## *Understanding bears*

Knowing how bears behave can help you stay safe. Bears are not territorial, but do have home ranges. Bears do not defend their home range, but they will defend their personal space. The size of that personal space depends on the individual bear and its habitat. Black bears and brown bears react to threats to their personal space differently. When black bears feel threatened, they will most likely run away or climb a tree. Brown bears are much more likely to react aggressively when threatened.

## *Preventing encounters and avoiding conflict*

The best way to stay safe while recreating in bear country is to avoid bears, and to especially avoid surprising a bear. If bears are surprised by people, they may feel the need to act defensively to neutralize the threat. On the other hand, if bears know people are in the area, they will generally do what they can to avoid them. The following is a list of best practices to use while hiking in bear country.

- Never approach a bear: If you enter a bear's personal space, the bear may become aggressive. Give female bears extra space; they may respond aggressively if they perceive a threat to their cubs.
- Make noise: Talk loudly, yell, clap your hands, sing, or use bear bells. Most bears will leave the area if they can hear you coming.
- Travel in groups: Groups are easier for bears to detect, and therefore, avoid.
- Stay alert: Keep an eye out for bears so you can give them plenty of room. Look for recent signs such as tracks, scat, fresh diggings or tree scratches. Never wear headphones or earbuds when traveling or working in bear country. Use your senses – sight, smell and hearing – to detect if bears might be nearby.
- Move cautiously: Choose routes with good visibility where possible. Move cautiously, especially important along creeks, on blind corners and in heavily vegetated areas.
- Stay away from bears that may be foraging: Avoid areas where you see or smell carcasses of fish or other animals, or see scavengers congregated. A bear's food may be near. If the bear is around, it may defend its cache aggressively.
- Leash your pet or leave it at home: Uncontrolled dogs can startle or provoke bears.

## *Bear Encounters*

When talking with students, focus on prevention, rather than a detailed discussion of what to do in a bear attack. Children can become fearful and may focus on worse-case scenarios instead of focusing on proactive ways to stay safe. Even so, teachers or presenters should be knowledgeable about how to handle a bear encounter so questions can be answered in the best manner possible. Encounters are also not uncommon in Alaska. Attacks are rare but it is not unusual for Alaskans to see both bears and moose. Children should have a basic understanding of how to respond if they do see one of these animals in the wild, or in their neighborhood. Instead of detailing all the bear encounter advice here, take the time to become familiar with the following resources:

- Staying Safe in Bear Country – copies of DVD may be ordered from [www.margosupplies.com](http://www.margosupplies.com). This 30-minute video is considered the best advice from bear biologists on how to handle bear encounters.
- ADF&G Website Resources: [www.alaskabears.alaska.gov](http://www.alaskabears.alaska.gov)

## *Bear attractants*

All of Alaska is bear country. Bears even live and travel through cities like Fairbanks, Anchorage, Juneau as well as many smaller communities. This by itself is not a problem. But it can become a problem if bears come to think of human environments as a good place to score an easy meal. To avoid conflicts, Alaskans need to be careful to keep garbage and other attractants away from bears. Again, it is unwise and illegal to feed bears, either on purpose or by not securing food or garbage away from bears. Once a bear learns to associate people with food rewards, things can quickly spiral out of control leading to property damage, public safety concerns and bears that are killed by homeowners or authorities for safety reasons.

### **Tips to avoid bear conflicts where you live:**

- Store garbage and pet food inside buildings or in bear-resistant containers.
- Take down your birdfeeders from April through October or even November if the winter is mild.
- Safely contain unattended pets and other animals. Provide protective enclosures for animals kept outside at night. Install electric fencing where necessary.
- Freeze fish waste and stinky garbage until garbage day.
- Smoking fish can attract bears. Do not leave your smoker unattended.
- Be sure to bring any uneaten pet food inside when pets are done eating. Bears love dog food even more than dogs do.
- Clean your barbeque grills each time you use it. Empty the grease trap or bring it inside after each use. If possible, store grill inside a garage or shed when not in use.
- Place your garden in the open, away from cover and game trails. Compost piles may attract wildlife, especially bears. Do not put meat, fish and other pungent scraps in compost piles. Cut up food scraps into small pieces and cover with leaf litter.



# Section 11: Activities


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1. A Year in the Life of a Bear
2. Bear and Moose Aware!
3. Home Connection: bear aware checklist

Alaska is a unique place — it's the only state in the country with a healthy population of brown and black bears living in close proximity to cities and towns. Most Alaskans believe bears enhance their quality of life here. Unfortunately, in the past five years an increasing number of bears around the state have been destroyed for feeding on birdseed or improperly stored garbage or pet food.

*Feeding bears is against the law!*

Alaska Department of Fish & Game regulation SAAC 92.230 makes it illegal to negligently leave out food and garbage in a manner that attracts bears. The penalty is \$100.

  
[www.adfg.state.ak.us](http://www.adfg.state.ak.us)

For more information:  
907.267.2137

Help keep Alaska's bears wild!

# A Year in the Life of a Bear

Adapted from *Tracking Bears!*  
Florida Fish and Wildlife Conservation Commission

## Objectives

Students will be able to track seasonal movements of male and female brown bears on a map. Compare and contrast the seasonal movements and activities of male and female brown bears. Describe a brown bear's diet and its seasonal habitat requirements.

## Methods

Students will track seasonal movements of brown bears in Southeast and Southcentral, Alaska.

## Background

Because the type and relative abundance of different forest types and plant communities varies across the state, bears living in different parts of Alaska depend on different combinations of habitat for their survival.

During the winter, if food is scarce, both male and female brown bears may spend time denning. During this period they eat very little and they do not travel very far. When they emerge from their dens in early spring, brown bears become more active and wide-ranging, feeding primarily on young, tender, leaves, shoots, and roots. Skunk cabbage and sedge are examples. In the summer, they range more widely looking for foods such as insects and soft fruits from plants like devil's club, salmonberry, and blueberry. In the summer and fall, salmon are in the streams/rivers and are an important food for many bears. In the fall, as leaves and soft fruits become scarce, both male and female brown bears can travel great distances throughout their habitats in search of food.

The area regularly used by an individual bear during the year is called its home range. Although many of the seasonal activities and

## A Year in the Life of a Bear

**Grade level:** 4-8

**Subjects:** Science, Language Arts, Math

**Skills:** Observation, interpret data, communication

**Duration:** One hour

**Group Size:** Pairs of students

**Setting:** Classroom

**Vocabulary:** habitat, home range

feeding preferences of male and female brown bears are similar, the home ranges of male brown bears are significantly larger than the home ranges of female brown bears. Home ranges of brown bears in Alaska vary greatly across the state. In general, bears living in higher quality habitats with a greater abundance of food have smaller home ranges than bears living in poorer quality habitats with a lower abundance of food sources. In a given habitat, the strongest males establish their home ranges in areas with the best food availability, while older, weaker, or younger males end up establishing home ranges in more marginal habitat. Generally, female brown bears with cubs are dominant over females without cubs. Thus, females with cubs claim the higher quality habitats while older, weaker, or younger females occupy the more marginal habitats.

## Materials

- Copies of the "year in the life" clue sheet
- Copies of the watershed illustration (expand to fit on large sheets of paper)
- Alaska Ecology Cards  
<http://www.adfg.alaska.gov/index.cfm?adfg=curricula.awc>
- GPS data displayed on maps showing individual bear movements over a year

## Procedure

1. Ask the students to describe where they go during weekdays and weekends. Then ask the students to think about how far they usually travel away from home on an average day.
2. Introduce them to the term home range as the area where an animal typically travels during a given year. Home ranges for large animals are usually measured in square miles.
3. Ask students if they think brown bears have ranges that are larger, smaller, or about the same size as their own home range. Then ask students if they think the home ranges of male and female black bears are the same size.
4. Explain that during this lesson, students will be divided into pairs. Distribute clue sheet, watershed illustration and sets of ecology cards with plants/animals in a bear's diet.
5. As an entire class or working in pairs, read the "Year in a Life" clue sheet and select the number on the watershed illustration that best describes where a bear is likely to be located during different times of the year.
6. Working in pairs, students select from the ecology cards, the various plant/animals that bears eat and place the "foods" in the appropriate habitat on the watershed illustration. Discuss bears foods and the types of habitat (e.g., alpine, sub-alpine, fen, muskeg, estuary, beach-fringe, stream, meadow, forest) associated with these plants/animals. Once the ecology cards are placed on the habitats map have students share their selections.
7. Using the GPS maps provided on the ADF&G website, ask students to compare female and male bear movements in the same area. Also compare/contrast movements between bears from different age classes and/or regions of the state.

## Evaluation

During which season do brown bears mate? (Spring).

During which season do brown bears have their cubs? (Winter).

Do brown bears eat different types of food during different times of the year? Why? (Different types of food are available at different times of the year).

During which season do brown bears travel the farthest? (Fall) Why? (find food) The least? (Winter) Why? (denning).

Which bear, male or female, travels the farthest during a year? (Male) Who has the largest home range? (Male)

Which bear dens the longest? (Female) Why? (Giving birth to cubs, nursing)

Does saving brown bears and/or habitats save other species too? How? (ex. predators keep numbers of prey like ground squirrels and moose from becoming so large that they prey population doesn't outgrow its food source; bears disperse seeds on their hair and in scat; bears bring fish from water onto land, fertilizing soil with marine nutrients; bears dig up plants, which helps distribute nutrients in the soil column. Plant diversity is increased).

## Extensions

Share the Anchorage Bears Story Map Project with the class. ADF&G biologists tracked nine Anchorage bears using GPS collars that included a video camera. The footage, combined with the location data, has provided some amazing insights into the daily lives of urban bears. Link to the project:

<http://www.adfg.alaska.gov/index.cfm?adfg=livingwithbears.anchorageurbanbears>

Provide a writing prompt such as the following, "Brown bears need different types of habitats just like an artist needs different colors of paint to complete a picture." Have students write a short paragraph explaining why brown bears depend on a mosaic of habitat types for their survival.



# A Year in the Life of a Bear

Name \_\_\_\_\_

## Winter

Most brown bears are denning high-up in alpine mountain and sub-alpine areas; most black bears are in dens in the forest. It is at this time that females give birth to their young.

## Early Spring

Bears emerge from their den and begin to look for fresh plant growth on low elevation south-facing slopes, and in riparian forests and wetlands. It is here in the fen, or muskeg, that bears enjoy some skunk cabbage and newly emerging sedges.

## Late Spring

Bears follow the signs of new plant growth into the tidal meadows. Sedges, chocolate lilies, cow parsnip, barnacles and sometimes they dig for clams. Bears also begin to look for a mate.

## Early Summer

Bears wander away from the lowlands to higher elevations. They begin to eat forest plants such as devil's club, blueberries, and salmon berries. They are following the melting snow;

## Mid-Summer

Bears continue to follow snow-melt up into the high country meadows/sub-alpine. They eat flowing plants, low growing blueberries and grasses. They also love deer and skunk cabbage.

## Late Summer

Salmon time! This time of year is like Christmas for bears. As they wait for salmon they also consume berries along the streamside.

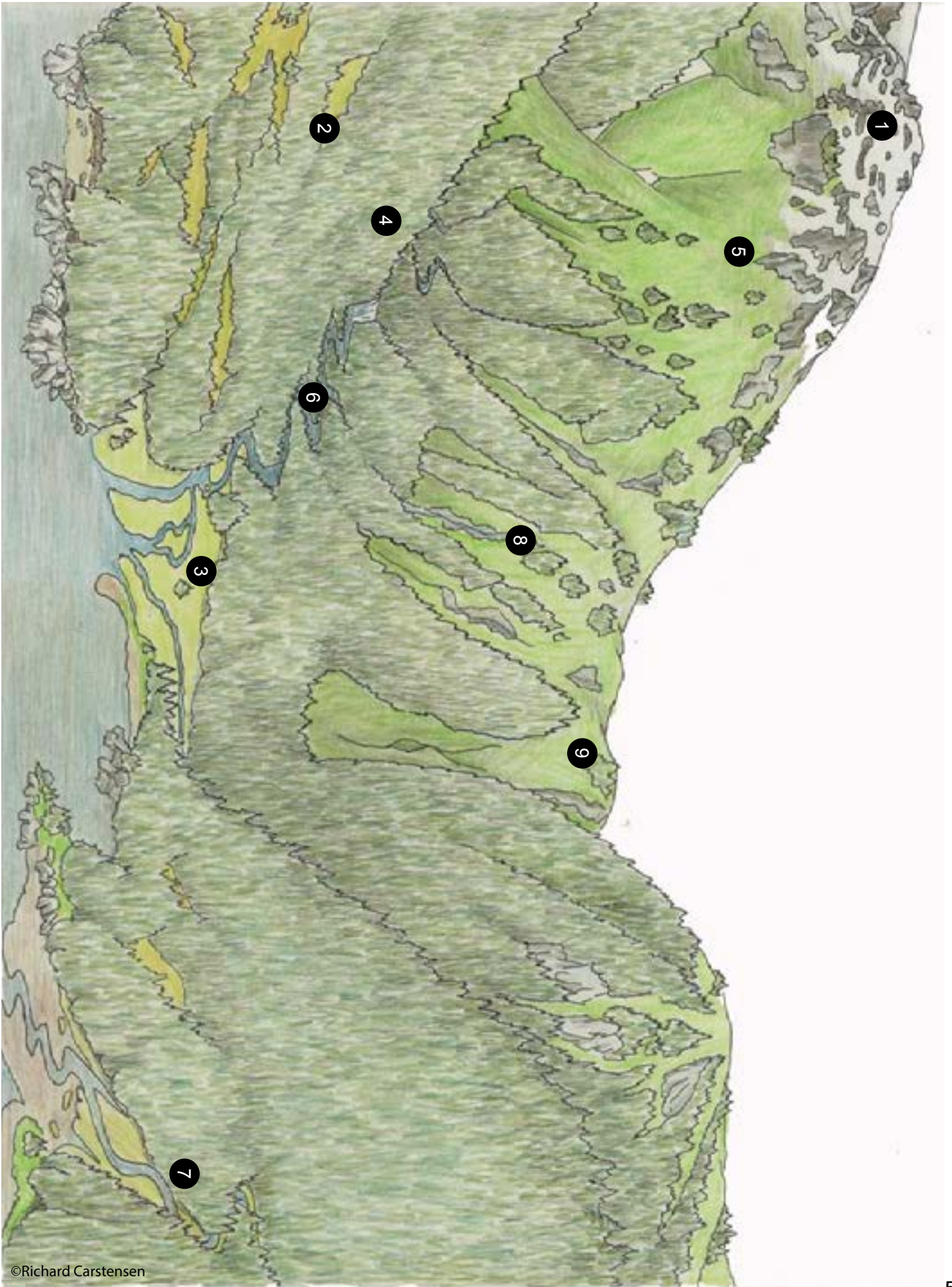
## Early Fall

Bears begin to leave salmon streams even if some fish are still running. They move up the mountain into avalanche slides. Snow melts here last leaving lots of fresh plant growth. Here, they finish off with more berries. This is the dessert course for a bear!

## Late Fall

As winter nears, bears move back up to the mountain tops (brown bears) or into the forest (black bears) in search of a den.









# Bear and Moose Aware!

An interactive wildlife safety presentation.

## Objectives

Educators present wildlife safety information in an engaging manner that includes visual aids and bear artifacts (hides, skulls, tracks) to help engage all learning styles. Students will apply what they have learned to minimize the risks of a negative wildlife encounter and to encourage responsible actions promoting coexistence with potentially dangerous wildlife species such as bears and moose.

## Background

Most Alaskans live around potentially dangerous wildlife, including bears and moose, so Alaskan students need to learn how to behave around these animals.

Many public agencies and nonprofits will come into classrooms to present about wildlife safety. These presentations, when available, are typically free. Call your local ADF&G office, or federal wildlife agencies, to see if presentations are possible. However, getting a “wildlife expert” scheduled to come into your classroom is not always possible. Our goal with this lesson is to enable classroom teachers or other educators to present wildlife safety to their students without needing outside support.

## Materials

ADF&G has posted several supporting materials on its website. These resources include:

- PowerPoint Presentation for 2-6 students
- PowerPoint Presentation for Grades 7-12
- Bear Photos for Grades K-12 – Best if laminated on 11” x 17” paper (tabloid size).
- Anchorage Urban Bears – An interactive

## Bear & Moose Aware

**Grade level:** 2-12

**Subjects:** Science, Social Studies

**Skills:** Communication

**Duration:** 45 to 60 minutes

**Group Size:** Any

**Setting:** Indoors or outdoors

**Vocabulary:** black bear, brown bear, polar bear, omnivore, herbivore, carnivore, safety, habitat, attractants

map about an ADF&G research project

<http://www.adfg.alaska.gov/index.cfm%3Fadfg%3Dlivingwithbears.anchorageurbanbearsstorymap>

- A Framework for Bear Safety Messages in Alaska – This document provides the most current messaging on bear safety. [http://www.adfg.alaska.gov/static/species/livingwithwildlife/bears/pdfs/framework\\_bear\\_safety\\_messages\\_alaska.pdf](http://www.adfg.alaska.gov/static/species/livingwithwildlife/bears/pdfs/framework_bear_safety_messages_alaska.pdf)
- Visit [www.adfg.alaska.gov](http://www.adfg.alaska.gov) and look for the pages on “Living with Bears” and “Living with Moose.”
- This ADF&G web page on wildlife safety for educators also has plenty of resources, including coloring books/pages and videos on staying safe around bears and moose <http://www.adfg.alaska.gov/index.cfm?adfg=educators.wildlifesafety>
- The following locations may have bear hides, skulls, replica scat and tracks or other artifacts to loan:
  - Your local ADFG office - <http://www.adfg.alaska.gov/index.cfm?adfg=contacts.main>
  - The Alaska Public Lands Information Centers (APLIC) - <https://www.alaskacenters.gov/>

- Alaska Resources Library & Information Services (ARLIS) - <http://www.arlis.org/>



## Procedure

**BEFORE CLASS:** Decide the best seating arrangement for your classroom. Arrange the artifacts at the front of the room or nearby so you can refer to them as you speak. Decide if you will use a projector or printed photos.

1. Once students are seated and ready to listen, let them know that you will be covering an important safety topic – how to be safe around moose and bears. Lay out any ground rules. In many instances, particularly with younger students, you may want to make it clear that they may ask questions during your presentation, but may not tell stories. This requires some explanation for the youngest students – discuss the difference between questions and stories and let them know the types of words that are often used when asking questions (who, what, where, when, why). You may want to follow up with another opportunity where students may tell their wildlife stories. Most every Alaskan child has a bear or moose story and while the telling of those stories can be entertaining and engaging, it may confuse students and detract from the presentation’s main points.

- a. Set the tone – Students may already be a little afraid of moose and bears. That’s understandable and we need to be honest with

students about safety concerns, but we should avoid teaching from a fear-based approach. Teach kids to minimize their risks, and to focus on empowerment through knowledge. If you like to be outside, it’s helpful to tell kids that you enjoy the outdoors and are able to do that safely because you know how to make smart choices and reduce risks. By presenting wildlife safety in a matter-of-fact way and modeling a non-fear-based approach yourself, you should be able to prevent anyone from becoming overly afraid of bears or moose. Focus on respect for wild animals, not fear.

- b. Invite participation and active listening. Ask questions and invite students to think about what they’ve seen. A quick and easy way to do this is to ask for a quick show of hands (no stories): How many students have seen a moose before? How many have seen a bear? How many students like to do things outdoors? How many students live in moose and bear country? Active brain break – One handy tip, especially with little ones, is to build in an active brain-break part-way through to get them moving and then ready to pay attention again. Use a modified “Simon Says” activity where the goal is to get students moving by acting out some of the things they learned. Tell your students to stand up, and do as you say. “Simon says, move your feet like you’re running, Simon says stop, there’s a bear. Simon says, stand your ground, stand in a group and say ‘Hey Bear.’ Simon says the bear is moving away, so you can go back the way you came. Simon says don’t run. Simon says it’s time to go fishing... or time to set up camp.... Or time to go biking, skiing, etc.” You get the picture. Have fun and be creative. Once they sit back down, you may have them take a deep breath together.

2. Make it personal – share some of your own personal experiences and model that it’s normal and even helpful to make mistakes as long as you learn from them. Empower students to become their own wildlife safety experts and to teach others what they know. Work on connecting with students on their

level – this will help them enjoy and remember the presentation.

3. These talks are flexible, inject your own experience and knowledge. Be creative! Use the following building blocks. If you have a limited amount of time, go straight to the safety concepts.

**a. Keep a safe distance:**

Focus on avoidance and prevention. Make sure students know that wildlife such as bears and moose are not normally aggressive towards humans but can become aggressive under certain circumstances, especially if a person gets too close. There is no magic distance – every situation is different – but it's helpful to tell kids to stay at least 100 feet from a moose and much farther away from bears. Show kids how far 100 feet is and practice judging distances.

Remember: If you inadvertently find yourself too close to a bear, back away slowly. NEVER run from a bear. If you run, a bear may instinctively chase after you. Bears can easily outrun a human sprinter. One concept that is commonly talked about in schools is “personal space.” That space can be different depending on the person but it's normal to start to feel a little uncomfortable, anxious or agitated when someone is too close.

**Activity: “Too close for comfort”**

- Ask the students to find a partner. You may want to break up pairs of close friends.
- Have the student face each other with about 6 feet apart.
- Tell the students to slowly walk towards each other until they no longer feel comfortable.

- Everyone can watch their body language – they might squirm, grimace, bend backward, or refuse to get any close. All of these are signs that they are too close for comfort.



Animals feel the same way when someone or something enters their personal space, and they may also react by becoming aggressive. It is considered fine to walk quickly or to run away from a moose. We will visit this point again later.

**b. Make noise and travel in groups – don't surprise bears!**

Tell students how important it is to make noise when you are in bear country (human

voice is generally considered best, but even bells are better than nothing). You can invite participation by asking what students do with their families to make noise when they're hiking. A good analogy is how the polite behavior is to ring the doorbell or knock on the door when you go over to a friend's house. You often don't get a favorable response if you just barge in and surprise everyone! Making noise when traveling in bear country is like ringing a doorbell – it lets bears know you are coming so they can get out of the way. Your volume needs to increase if it's windy or you're traveling along a salmon stream with the sound of rushing water obscuring other sounds. Another way you can illustrate this is to ask students if they've ever been working quietly in their room (and as you tell this story, lower your voice so they have to listen carefully to hear you), and everyone is quiet... AND THEN ALL OF A SUDDEN THE FIRE ALARM STARTS RINGING! You can yell the last part, loud enough that students jump a little in surprise. Students find this fun and exciting but be careful with this one – with the wrong group, kids sometimes get too excited and find it hard to settle back down.

c. **Use your senses to stay aware of your surroundings** – look for scat, tracks, markings on trees, or dead fish on trails. Listen for rustling in the bushes. If you notice a funny smell, be alert. If you smell a dead animal, don't go any closer. It could be a bear eating a carcass. Never wear ear buds or head phones in bear country.

d. **Increased speed = increased risk.** Be aware that you are at greater risk when you are moving fast in bear country. You can decrease that risk by traveling in groups, making noise, and slowing down when you can't see what's ahead or off the trail.

e. **Stay especially clear of mother bears and mother moose and their offspring.** Let students know that mothers of both species (moose and bears) are especially protective of their young. The mothers are the ones who raise them, and in fact, with bears, the male bears can sometimes be aggressive toward cubs, which is part of the reason why the mothers are so protective. Never get between a bear cub or a moose calf and its mom. One story that brings this home to students is to think about how protective they feel about their brothers and sisters. How would they feel if a stranger came up to your sibling and started talking to them? Might you feel protective, particularly if the stranger seemed dangerous or unfriendly?

f. **Keep a clean house and camp.** Safety begins around your home or camp. If you keep a messy home or camp, you are inviting bears to come near, and creating a dangerous situation for both you and the bear. Moose will sometimes eat garbage too, but it's not a common problem like bears eating garbage. The main attractants around people's homes are garbage, birdseed, pet food, livestock and livestock feed, messy barbecue grills and fish carcasses, smokehouses or smokers and fishing gear.

trees while you talk about how on a nice summer day you decided to have a party and invite a bunch of friends. Then you hung up a bird feeder to attract birds because your friends love birds. Your friends started coming and brought all kinds of foods. Have the students tell you their favorite foods to bring to a picnic. Draw a picnic table, a barbecue grill and a variety of foods. At the end



of the party, tell the students you were tired, so you just brought out trash cans and cleaned up a little bit, but left the trash cans out and some of the food and the BBQ grill, and went to bed, planning to finish clean up the next day. Well, guess who found the food with their nose and came to visit in the middle of the night? That's right – a bear! Draw the bear making a mess of everything – knocking down the bird feeder, dragging the garbage around the yard and licking the grill and the picnic table. Then you wake up the next morning, mad at first at the bear for making such a mess and creating more work for you! But after a little while you think about it and realize the bear isn't the one to blame. Who is to blame? YOU! Then you get around to cleaning everything up with a better attitude.

Wipe everything away and talk about how to keep a clean camp or yard. Then make sure you end with the fact that the bear may come back again once or twice, but won't stay because there's nothing to eat! Kids love this story and it keeps their attention engaged and focused.

A particularly effective way to teach this part of the lesson is to **use a dry-erase board** to tell a story. Draw a house, some mountains and some

### Tips to avoid food-conditioning a bear:

- Store garbage and pet food indoors or in bear-resistant containers like a metal box with a sturdy lock.
- Put away bird feeders after April 1.
- Wait until trash pick-up day to put out trash.
- Clean BBQ grills with a wire brush after grilling. Empty the grease trap and bring it inside after each use. Store grill indoors if possible.
- Electric fencing around livestock, chicken coops, garbage bins and compost piles.

**How to handle a bear encounter:** Even with young students, it's helpful to discuss what to do if you actually see a bear. But unless the students are older, you don't want to focus much, if at all, on what to do if the bear attacks. Again, the focus should be on prevention. The best way to educate yourself is to watch "Staying Safe in Bear Country" – most ADF&G offices have copies to loan or you can purchase a DVD online at [www.margosupplies.com](http://www.margosupplies.com). This video is recommended for high school, and some middle school students. It's also helpful to review the bear messaging framework - [http://intra.dfg.alaska.local/Forms/commteam\\_docs/framework\\_for\\_bear\\_safety\\_messages\\_in\\_Alaska.pdf](http://intra.dfg.alaska.local/Forms/commteam_docs/framework_for_bear_safety_messages_in_Alaska.pdf). Teaching these concepts through role play exercises is recommended. Choose a few students to help you act out these concepts, or involve the entire class, making some students trees, if it makes sense to do so.

- **If you see a bear, don't run.** Try to act brave and calm down so you can think.
- **If you see a bear and it doesn't notice you,** you can back away slowly, getting more distance between you and the bear. Keep your eyes on the bear.
- **If you encounter a bear and it does notice you,** let the bear know you are there but try not to startle it. Face the bear, stand your ground, group up with others and alert the bear by

talking to it calmly. You can raise your arms over your head to look bigger, and talk to the bear. It doesn't matter what you say, but some people like saying, "Hey bear... why don't you go away, bear."

- **Once the bear starts to leave,** you can leave the area slowly, keeping your eyes on the bear.
- **Attacks:** Sometimes students will ask questions about what to do in an attack. If students ask, it is a good idea to discuss it, but always circle back to how rare attacks are, and how your best bet is prevention. You will need to explain the difference between defensive and non-defensive attacks. And then you can explain what to do: In a defensive attack (the most common kind of attack), play dead until the bear no longer sees you as a threat and leaves. In a non-defensive attack, fight back. It's also helpful to remind students that they should only play dead if you're facing a defensive bear and it actually makes contact or knocks you down. Playing dead too soon, like when the bear is several hundred feet away, will just invite curiosity by the bear, drawing it near.

**How to handle a moose encounter:** Moose pose a significant safety issue in many Alaska communities but they don't get as much attention as bears. Responding to a moose encounter is a little more straightforward.

- **If you see a moose,** walk away quickly or run. It's perfectly acceptable and encouraged to run from a moose. They may chase you but only because you entered their space and they are ornery – they are prey species and not hardwired to chase things that run in the same way as a predator.
- **Run to a safe place** – inside a building or a safe vehicle or behind a tree, even a skinny one. Climbing a tree, if you have time, is also an acceptable solution to get away from moose. Try to keep something between you and the moose so it can't use its hooves to stomp you. Don't leave your safe spot until the moose leaves the area.

- **Never throw snowballs or anything else at a moose**, or try to haze it out of the way. Make a detour around the moose and don't get in its personal space. Throwing things at moose will make them agitated and more likely to charge you or the next person who comes along.
- **Never feed a moose.** It is illegal and dangerous. Moose that have been fed tend to approach people and may become aggressive.

## Natural history information - bears

While this may seem extraneous to all the safety information, the more students know about bears and their habits, the more they will know how to avoid them, and to respect them. Some studies have shown that the more people know about bears and their role in an ecosystem, the more willing they are to change their behavior to coexist safely with them. We urge you to include this information in your presentation – students enjoy it too.

- Black bears/brown bears/polar bears – compare and contrast – include size, color of hide, muzzle difference, face and nose shape, claws, hump on brown bears.
- Show skulls – point out the large nose (amazing sense of smell), the eye orbits (eyes in front like to hunt, meaning bears are predators), the various kinds of teeth (canine, molars – the presence of both indicates an omnivore – compare to carnivore and herbivore).
- Foods bears eat – show pictures. Point out that they also eat food left out by humans (garbage/ bird seed) and how that is not good for anyone. Help students understand how important food is for a bear – and how their search for it defines their existence.
- Seasonal and life cycle – it's important to cover the life and seasonal cycles of bears. Include how long cubs stay with their mothers, how mother bears (not the males) care for their young, and when bears den and when they are active.

## Natural history information – moose

Size and adaptations – large body size to keep them warm, long legs to walk through deep snow, eyes on the side likes to hide (to keep an eye out for predators because they are prey).



What moose eat – you might even have them look later on their playgrounds to see if they can see signs of moose eating.

Seasonal and life cycle – in some communities, winter populations in town are higher because moose come into communities to find food and to avoid deep snow. Winter is a difficult time for moose and some years, they may starve or be on the brink of starvation.

## Evaluation

1. Run through a few scenarios and ask students what they would do. Encourage them to use their critical thinking skills.
2. Show a photo of a bad home or camp and ask them what needs to be corrected.

## Extension

Hand out the bear aware checklist which is available at any ADF&G office. Assign it as homework or extra credit. The checklist will encourage them to look around their home for bear attractants.

## Frequently asked questions

they are given plenty of space.

### What if a bear charges me?

If a bear charges you, stand your ground. NEVER run from a bear. If an adult in your group has a deterrent, like bear spray, this is the time to use it.

### Why don't I just shoot the bear?

The idea of using a firearm is often exciting to students. At ADF&G we don't advocate for the use of bear spray over firearms but this is a distracting topic for students. Some kids like to raise their hands and say they would just shoot the bear, or their family member shot a bear, and they might even tell a very tall tale. The best way to deal with this is to thank them for sharing, and say it is legal to shoot a bear in defense of life or property (i.e. if the bear is threatening a person's life or breaking into a home). Remind students to focus on prevention in the first place. Be respectful to the child, but don't let this topic go on too long and distract students from the main messages.

### How does bear spray work? Can kids carry it?

Bear spray is a deterrent designed to stop aggressive behavior in bears. It's not lethal – it won't kill a bear – but should still be treated as a weapon because it can cause harm to bears and people. Bear spray is designed to propel a mist for 15-30 feet. Capsicum, the active ingredient in bear spray, is a strong irritant to the eyes, nose, mouth, and lungs of bears. The spray causes a painful but temporary burning sensation, which generally causes the bear to quit its aggressive behavior and run away. The effects normally last 30-45 minutes. Whether kids can carry it is a parental decision. Most young children are with their parents and don't need to carry their own. But when they become teenagers or start hiking on their own, carrying their own bear spray may make sense.

### Does bear spray work on moose? How about wolves?

Bear spray will affect any animal with lungs and mucus membrane – meaning any mammals. It should be used only as a last resort with moose, though. Moose are rarely a real threat as long as







# Bear Aware Checklist



Because most of Alaska is bear country, we all need to be aware of bears. Some of us live in neighborhoods where bears are commonly seen. In those areas, it is especially important when bears are awake (April-November) to keep garbage and other bear attractants out of reach of bears. **Directions:** Identify items around your home that might attract bears. If you answer “yes” to any questions below, you have some work to do! Refer to the solution sheet on the back to figure out how you can make your home and neighborhood safer.

<p><b>Garbage</b></p> <ul style="list-style-type: none"> <li>•Is there any trash outside your house, garage or shed that is not stored in a bear-resistant container?</li> </ul>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<p><b>Bird Seed</b></p> <ul style="list-style-type: none"> <li>•Are there any bird feeders out during the months when bears are awake? Also, are there any leftover seeds on the ground?</li> </ul>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<p><b>Pets and other animals</b></p> <ul style="list-style-type: none"> <li>•Is there any pet food stored outside where bears might get it?</li> </ul>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<ul style="list-style-type: none"> <li>•Do you have any livestock on your property (chickens, ducks, goats, horses, beehives) that are not protected from bears by an electric fence?</li> </ul>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<p><b>Fish</b></p> <ul style="list-style-type: none"> <li>•Do you have any fishy-smelling gear (nets, lines, coolers) or fish cleaning tables outside your home?</li> </ul>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<ul style="list-style-type: none"> <li>•Do you keep fish waste outside your home or outside in garbage cans (non bear-resistant)?</li> </ul>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<p><b>Freezers, Smokers and BBQs</b></p> <ul style="list-style-type: none"> <li>•Do you have any freezers outside that might provide easy access to bears?</li> </ul>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<ul style="list-style-type: none"> <li>•Does your BBQ have leftover food or grease on it?</li> </ul>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<ul style="list-style-type: none"> <li>•Do you leave your smoker outside unattended?</li> </ul>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<p><b>Compost</b></p> <ul style="list-style-type: none"> <li>•Do you have a compost pile on your property that might attract bears?</li> </ul>	<input type="checkbox"/> YES <input type="checkbox"/> NO



Created by the Alaska Department of Fish and Game and the Anchorage Bear Committee



## Bear Aware Checklist: *Solution Sheet*

# What *YOU* do really matters!

### **Garbage:**

Secure your garbage so bears can't get to it. Keep it inside, in a bear-resistant container, in a reinforced shed or garage, or dispose of waste immediately. Remember, if a bear gets into your trash you can be fined. Bear-resistant containers are available for rent from Alaska Waste and Solid Waste Services for a small fee. For more information about rates and service call your waste provider (Alaska Waste: 563-3717; Solid Waste Services: 343-6262).

### **Bird Seed:**

Don't feed birds during active bear season (April 15 to October 31). Clean up spilled bird seed.

### **Pets and other animals:**

Install electric fences to keep bears out of animal pens, corrals, chicken coops, rabbit hutches and beehives. Store pet and livestock food out of reach of bears.

### **Fish:**

If you clean your fish at home, keep all fish waste in a freezer out of reach of bears until garbage pick-up. You can also take your fish waste straight to the transfer station or landfill. Store fish nets, tackle and line indoors, in a garage, or otherwise out of the reach of bears.

### **BBQs and Smokers:**

Clean BBQ grills thoroughly after grilling. If possible, store grill inside the garage or shed when not in use. Smoking fish can attract bears. Do not leave your smoker unattended.

### **Compost:**

Composting can attract bears. If you live in area where bears are commonly seen, protect your compost pile with an electric fence. Do not put fish waste or smelly food scraps in your compost pile. Chop items well.

### **It takes a community!**

Handling attractants responsibly around your home will help reduce conflicts with bears and other wildlife. By acting responsibly, you can help set an example for others about how to live safely with wildlife in our community.

**Did you find anything that needed to be corrected?**

**If so, what will you do?**







# Useful Terms

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**Adaptation:** the process of adjusting to the environment; a trait that helps an organism survive in a particular environment.

**Bear sign:** although wildlife may not be visible, signs or clues that they have been around can usually be found. Bear signs include tracks, scat, scratches on trees, daybeds, smashed logs, large rocks that have been turned over and hair left on trees.

**Boar:** an adult male bear.

**Boreal forest:** the forest of mixed conifers and hardwoods that grows in cold and dry northern areas around the world, including Interior Alaska.

**Canine teeth:** teeth that are located between the incisors and premolars. In carnivores these teeth are usually large, conical and pointed, and are used to kill and hold prey.

**Camouflage:** coloration and patterning (or, rarely, behavior) that provides a disguise from predators.

**Carcass:** the dead body of an animal.

**Carnivore:** a meat eater. The teeth are large and sharp, suitable for cutting flesh, and the jaws powerful.

**Carrion:** dead and rotting flesh.

**Coastal rainforest:** the coniferous forest that grows along the western coast of North America from Kodiak Island to Northern California.

**Game:** any wildlife species sought after by humans for hunting and/or trapping. May be classified by regulation as big game, small game, furbearers or other categories. Wildlife species that are not hunted by humans are called nongame.

**Habitat:** the place where an animal lives that provides food, water, shelter (or cover), and space in a suitable arrangement that an organism needs to survive.

**Hibernate:** to spend the winter in an inactive state during which life processes (breathing, heart rate, body temperature, etc.) are reduced but not shut down.

**Home range:** the area where an animal travels in the scope of normal activities.

**Omnivore:** an animal that eats both plant and animal matter.

**Predator:** an animal that kills and eats other animals.

**Prey:** animals that are killed and eaten by other animals.

**Riparian:** bordering rivers and streams.

**Torpor:** a state of lowered physiological activity characterized by reduced metabolism, heart rate, respiration, and body temperature that occurs in varying degrees in hibernating animals.

**Tundra:** the windy, treeless, and periodically cold environments that occur at high latitudes and at high elevations. Arctic tundra in the arctic is often underlaid by permafrost. Alpine tundra exists in high mountains at many latitudes.

**Ursidae:** the bear family. Ursids include the black bear, brown bear, polar bear, sun bear and sloth bear.



# Teacher Resources

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## Website [www.wildlife.alaska.gov](http://www.wildlife.alaska.gov)

The Alaska Department of Fish and Game offers a host of online materials about Alaska's bears and other wildlife. Check out these resources!

- Living with Bears [www.alaskabears.alaska.gov](http://www.alaskabears.alaska.gov)
  - How you can stay safe in bear country video
  - Bear Aware Coloring Book
  - Essential for Traveling in Bear Country in nine languages
  - Bear Deterrent Electric Fences
  - Bear Resistant Containers
- Species Profiles  
<http://www.adfg.alaska.gov/index.cfm?adfg=species.main>
- Anchorage Bears Story Map  
<http://www.adfg.alaska.gov/index.cfm?adfg=livingwithbears.anchorageurbanbears>
- Teacher Resources  
<http://www.adfg.alaska.gov/index.cfm?adfg=educators.main>
- *Alaska's Wild Wonders*- magazine for kid  
<http://www.adfg.alaska.gov/index.cfm?adfg=educators.wildwonders>
- *Sounds Wild* audio recordings  
<http://www.adfg.alaska.gov/index.cfm?adfg=soundswild.main>

## Kits

Bear kits may be checked out by educators, and are available from several locations across the state. They may also be mailed to communities in Alaska.

Available at the following locations:

- **Anchorage** - Alaska Resources Library and Information Services (ARLIS)  
Located on the University of Alaska Anchorage Campus in the Consortium Library, Suite 111. Contact: (907) 272-7547
- **Fairbanks** - Alaska Department of Fish and Game  
Located at 1300 College Road. Contact (907) 459-7206
- **Juneau** - Alaska Department of Fish and Game  
Located at 802 3rd St. in Douglas. Contact (907) 465-4292
- **Palmer** - Alaska Department of Fish and Game  
Located at 1800 Glenn Hwy. Contact (907) 861-2104





Stan Price State Wildlife Sanctuary: Brown bear cubs playing at the mouth of Pack Creek on the eastern shore of Admiralty Island about 30 miles south of Juneau. ©ADF&G, photo by Jane Pascoe