

## A Bear's Menu



### When

Before the expedition

### Disciplines

Biology, mathematics, and fine arts

### Description

Working in small groups, students examine the feeding habits of bears and draw pictures to show what bears do in spring, summer, fall, and winter. Students use a small pattern of a grizzly bear and increase its scale to construct a full-size silhouette of a grizzly in order to appreciate the bear's size.

### Learner Outcomes

The student will:

- Describe the seasonal cycle of a bear's life by examining its eating habits.
- Recognize the shape and size of an adult grizzly bear and compare it to his/her own body size.

### Materials

Yellowstone Bears handout, Bear Food Chart handout, Bear Characteristics handout, large circular pieces of paper, markers, crayons, pencils, Grizzly Bear Pattern drawn on a grid of 1/2" squares, scales, tape measure, scissors, measuring tape, drawing paper (total of 8 pieces, each 24" x 36")



### Background

Yellowstone provides habitat for both black and grizzly bears. Although they are different species and each has unique physical and behavioral characteristics, they share similar diet requirements. Their feeding habits determine where they go to feed during the year as food availability changes with the seasons.

Grizzly bears were listed as a "threatened" species in 1975 under the Endangered Species Act. Because of the animal's great size and need for large unpopulated tracts of land, Yellowstone has identified specific areas of the park as essential bear habitat where human use is limited and bears pursue natural behavioral patterns. This management of the land is essential for the protection and recovery of this threatened species.

**Suggested Procedure for Activity 1:  
Seasons of the Bear***Before the expedition, the teacher will:*

1. Divide students into small groups and distribute the Yellowstone Bears handout. Allow time for students to read it aloud in their small groups and complete the chart.
2. Discuss the differences in physical characteristics and behavior between black bears and grizzly bears. Compare the diets of black bears and grizzly bears.
3. Distribute the Bear Food Chart to small groups. Discuss how to read the chart and be sure all students understand how to interpret its information. Pass out large circular sheets of paper. Instruct students to divide the circles into fourths and label them spring, summer, fall, and winter. Have students draw bears during each of the seasons, illustrating what the bears eat at that time of year. Students may wish to use the Bear Characteristics handout for accuracy in their drawings.
4. Collect and display drawings. Discuss the bears' yearly feeding patterns. Why is this called a cycle?
5. Ask students where bears will be and what they will be eating at the time of their expedition.
6. Read aloud and discuss the following Yellowstone National Park press release dated October 3, 1994.
7. Pose the question: Could this happen again? Some biologists warn that bears' traditional food sources are declining all across the Yellowstone region. Bison herds are smaller, thereby reducing the amount of winter-killed carcasses available; cutthroat trout are being eaten by lake trout in Yellowstone Lake; and a fungus is killing the white bark pine trees that supply the nuts that many bears fatten up on in the fall. What do you think could happen if these trends continue? What can be done, if anything, to protect these important food sources?





## Yellowstone National Park Press Release, October 3, 1994 Student Handout

### Poor Food Year for Bears in the Yellowstone Ecosystem

This year has been a very poor food year for bears in the Yellowstone Ecosystem. Because of the mild winter, very few winter-killed ungulate carcasses were available for bears to scavenge on this spring. Winter-killed carcasses are an important high-quality food source for bears in the early spring before most vegetal foods are available. Cutthroat trout spawning numbers in Yellowstone Lake tributaries were lower than average this summer; spawning cutthroat trout, available to bears during the spring and early summer, rank as one of the highest sources of energy for bears in the Yellowstone Ecosystem. This summer was also drier than average, and as a result most vegetation dried out early. Army cutworm moths, an important late summer food, appeared less abundant than in recent years. In addition, whitebark pine trees within the Yellowstone Ecosystem produced almost no cones this year. Whitebark pine seeds are especially important because of their high fat content and their potential abundance as a prehibernation food source. The combination of all these factors has left bears with very few foraging opportunities, especially during the late summer/fall seasons when bears begin searching intensively for high-energy foods prior to denning. As a result of these factors, areas outside of Yellowstone National Park have been experiencing a much higher than average number of bear-human conflict situations at private homes, lodges, and campgrounds. In an effort to reduce bear-human conflicts and promote the conservation of grizzly bears in the Yellowstone Ecosystem, Yellowstone National Park has accepted grizzly bears involved in bear-human conflicts from the states of Wyoming and Montana for translocation into the park. This year eleven different

grizzly bears were translocated twelve times from areas outside of the park to areas within the park. The park accepted these bears for relocation into the park to allow personnel from the Wyoming Game and Fish Department and the Montana Department of Fish, Wildlife, and Parks to work with private landowners to bear-proof facilities so that bears would not be attracted to private landowners' property.

Yellowstone National Park officials remind all people living in Bear County that garbage and other attractants should be kept secured so as not to attract these large and potentially dangerous animals into residential areas.



## Yellowstone Bears: The Black Bear Student Handout

Black bears live in the forests and open meadows of Yellowstone. They spend much of their time, spring through fall, looking for food. A black bear's diet is similar to a grizzly bear's. Most of its food consists of plants, such as grasses, berries, nuts, roots, and occasionally the soft chewy layer of wood beneath tree bark. It eats some meat such as carcasses, small rodents, elk, spawning trout, frogs, and salamanders. It eats almost any insect, especially ants.

Black bears come in a variety of colors. They may be black with a light brown nose, brown, cinnamon, or blond. Black bears are smaller than grizzly bears. Adult black bears can weigh from 135 pounds to 315 pounds and measure about three feet at the shoulder. Black bears, even cubs, are excellent climbers, and their short 1 1/2 inch long claws help them climb trees for protection and reach the seeds within pinecones.

A black bear makes its den in a natural cavity such as a cave, a hollow tree, an abandoned den of another animal, or under rocks, logs, or tree roots. When born, cubs weigh only 10 to 20 ounces and are only 8 to 10 inches long. When they leave the den, they are about 5 pounds. Black bear cubs stay with their mother for a little more than a year. A black bear mother may raise six to eight litters in her lifetime. Black bears typically live from 15 to 20 years.

### Black Bear Characteristics

Weight: \_\_\_\_\_

Height: \_\_\_\_\_

Color: \_\_\_\_\_

Diet: \_\_\_\_\_

Habitat: \_\_\_\_\_

Average Life Span: \_\_\_\_\_





## Yellowstone Bears: The Grizzly Bear

### Student Handout

Grizzly bears, with their distinctive shoulder hump of strong muscle and long front claws, feed and roam in Yellowstone's open meadows, close to forested hillsides. Some grizzlies have silver-tipped hair, and can be brown, black, cinnamon, or even blond. Although they measure about 3 1/2 feet at the shoulders, they can reach nearly 7 feet when they stand on their hind legs. Adult bears can weigh between 200 and 700 pounds, but they average about 340 pounds. Being big, however, doesn't slow them down; grizzly bears can easily run up to 45 miles per hour for short distances.

Bears have a keen sense of smell that helps them find food and to know when other animals and people are nearby. Grizzly bears like to feed on plants such as grasses, roots, berries, and pine nuts. They eat some meat, such as winter-killed carcasses, elk, spawning trout, or small burrowing animals. They also like to eat insects, such as ants, grasshoppers, and moths.

Besides digging for some of their food, grizzly bears use their 3-inch-long claws to dig their winter dens. While in their dens, cubs are born, weighing only about a pound. For the next couple of months, cubs feed on the rich milk of their mothers. When they emerge from their dens in the spring, cubs weigh between 5 and 10 pounds. While bears are in their winter dens, they do not eat, drink, urinate, or defecate.

Grizzly bear cubs frequently spend two years with their mother before venturing out on their own during the spring of their third year. A grizzly bear mother may raise four to six litters in her lifetime. Most grizzly bears live between 15 and 20 years.

#### Grizzly Bear Characteristics

Weight: \_\_\_\_\_

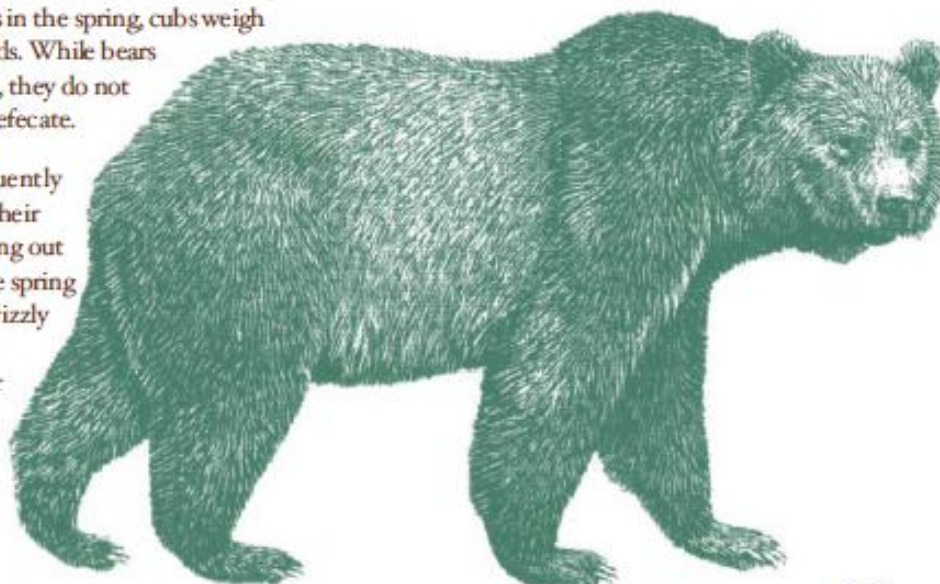
Height: \_\_\_\_\_

Color: \_\_\_\_\_

Diet: \_\_\_\_\_

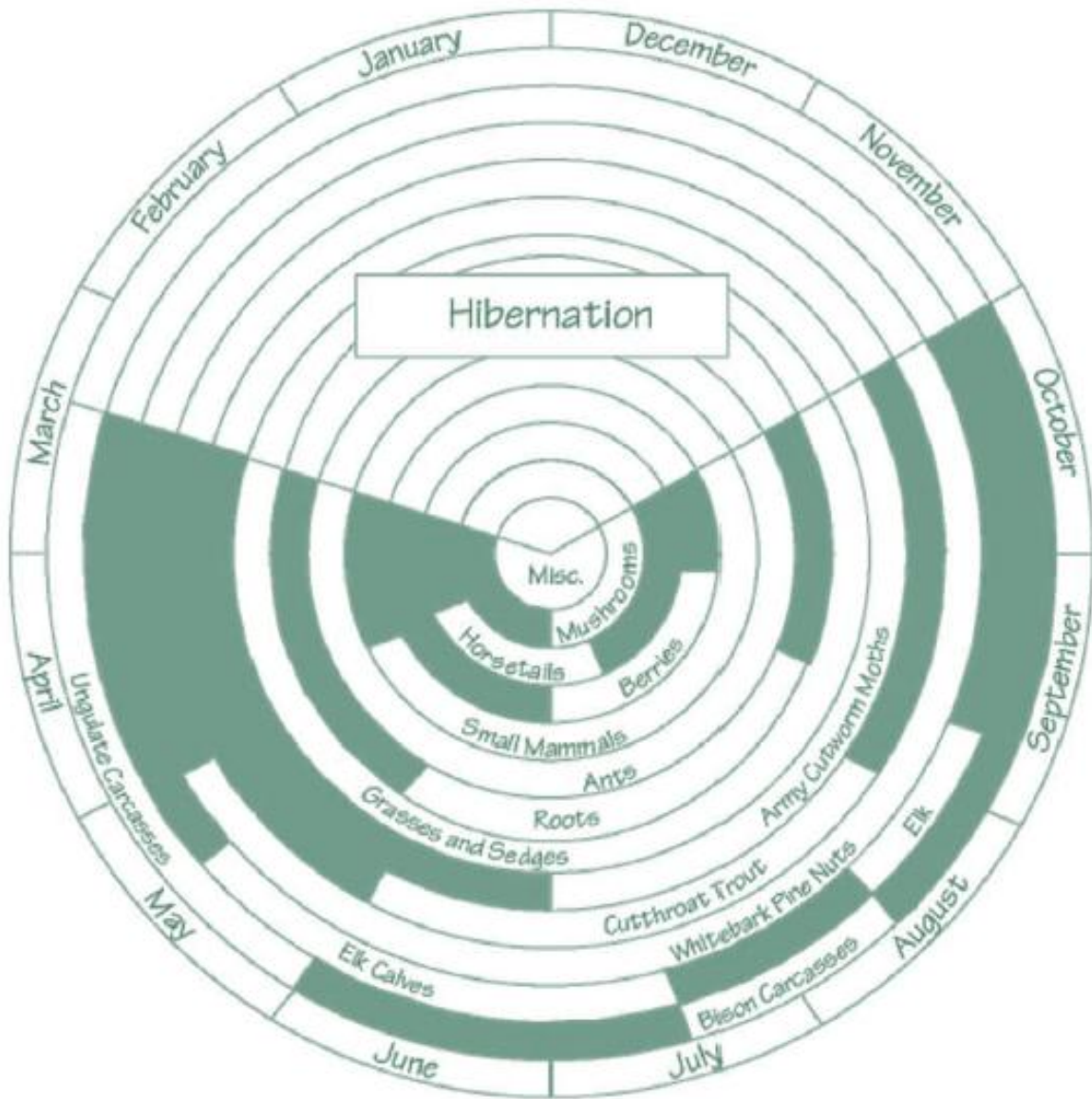
Habitat: \_\_\_\_\_

Average Life Span: \_\_\_\_\_



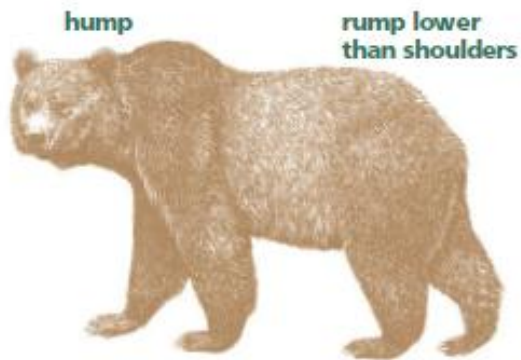
**Bear Food Chart**  
Student Handout

Seasonal Availability of Common Bear Foods in Yellowstone National Park

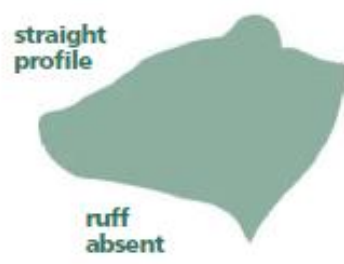
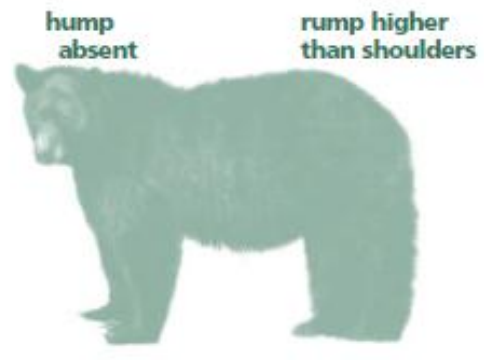


**Bear Characteristics**  
Student Handout

**Grizzly Bear**



**Black Bear**





**Suggested Procedure for Activity 2:  
Graph a Grizzly***The teacher will:*

1. Divide the students into eight groups. Explain that the class will be making a life-size cutout of a grizzly bear. Distribute the grizzly pattern to each group and assign one piece to each group. Also distribute a sheet of drawing paper to each group. Have students create a grid of 4" squares on their drawing paper in pencil (at least five squares by four squares).
2. Explain to students that they will be increasing the size of the drawing on the pattern four times. Discuss ratios. Ask students to transfer each pattern piece, enlarging the scale of the lines drawn on the pattern.
3. Have students cut out their enlarged pieces, fit them together, and tape them.
4. Display the grizzly bear low on the wall where students can get down on all fours and compare their size to that of the grizzly bear.
5. Have students review the information on the Yellowstone Bears: The Grizzly Bear handout they completed in the previous activity.
6. Discuss differences between grizzly bears and students, especially size. Are there any similarities in diet? Discuss importance of habitat for an animal as large as a grizzly bear. Discuss Yellowstone's role in protecting grizzly bears.





**Grizzly Pattern**  
Student Handout

Grizzly Pattern 1 square = 4"  
(Height at shoulders approximately 39")

