CAVOC 7th Grade Spring Math Curriculum

(Cedric A. Vig Outdoor Classroom)

Suggested Schedule- Spring

Time/Period	ROPES	MATH	SCIENCE	HEALTH	HISTORY	ENGLISH	TECH. ED.
8:30 - 9:05	1	2	3	4	5	5	6
9:10 - 9:45	6	1	2	3	4	4	5
9:50 - 10:00	Snack Break	Snack Break	Snack Break	Snack Break	Snack Break	Snack Break	Snack Break
10:05 - 10:40	5	6	1	2	3	3	4
10:45 - 11:20	4	5	6	1	2	2	3
11:25 - 12:00	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
12:05 - 12:40	3	4	5	6	1	1	2
12:45 - 1:20	2	3	4	5	6	6	1
1:25 - 2:00			Fear	Factor	Incentive		
2:00 - 2:15	Clean / Up	Clean / Up	Clean / Up	Clean / Up	Clean/ Up	Clean / Up	Clean / Up

Bearly Growing

(~ 35 minutes)

Objective for Unit

Students will compare similarities and differences between black bears and humans.

DPI Standards for Environmental Education

A.8.1, A.8.6, C.8.2, C.8.3, C.8.4, C.8.5, C.8.6, C.8.7, F.8.5, - Science Standards

A.8.1, A.8.4, A.8.5, A.8.6, D.8.4, E.8.1, E.8.2, E.8.3, E.8.4, F.8.2, F.8.4, - Mathematics Standards

Materials

Graph paper
Drawing paper
Pencil
Clipboard
Copies of student data page

Desired Location

Shelter

Resource

Project Wild

Background Information

The black bear *(Ursus americanus)* can be found in the United States, Canada, and Alaska. In the east, the black bear primarily inhabitats forests and swamps. In the west, the black bear roams chiefly in mountainous areas. Black bears are primarily nocturnal but occasionally roam around during the mid-day.

A black bear's life span averages 20 to 25 years. Longevity and survival of the black bear depend upon the availability of a suitable habitat and its ability to avoid humans. An adult male bear is called a sow. An adult male bear is called a boar. A baby bear is called a cub. When a sow becomes sexually mature between 2 and 3 years old, she is capable of breeding and may have one to four cubs. Contrasted with human fetal development of about 9 months, the sow is pregnant for about 7 months.

The sow has her cub or cubs in the shelter or den where she spends the winter months. On average, a female black bear will have two cubs. The sow does not have a litter every year but every other year. At birth, a young cub weighs about 8 ounces- about the size of a guinea pig. Bear cubs stay in the den with their mother until they are able to move around very actively, usually until late April or early May.

Bears and humans are classified as mammals, which means that both are warm-blooded, nourish their young with milk, and are covered with varying amounts of hair. Bear cubs and humans survive solely on their mother's milk for the first few months of life. Cubs nurse while in the den and only for a short time after leaving the den in early spring. By the time berries ripen and grasses are plentiful, the cubs have learned to climb and can eat the available food sources. Soon the cubs will need to hunt and

gather food for himself or herself without the help of the sow. At about 18 months of age, the cubs must go out searching for their own home range. The sow will allow the female cubs to stay within her home range. The male cubs, however, must find territory to claim as their own.

Black bears are omnivores, which means they eat both plant and animal material. In early spring, they tend to eat wetland plants, grasses, insects, and occasionally carrion (dead animal matter) or the protein-rich maggots found near the carrion. In late spring and early summer, bears feed on berries, grubs, and forbs (broad leafed plants). In late summer and early fall, bears feed mostly on nuts and acorns. In the fall season, bears must add much fat to their bodies in order to survive the winter months in their dens. Cub growth will vary throughout the country.

When black bear cubs reach one year of age, the female cubs weigh 30 to 50 pounds and the males weigh 50 to 70 pounds. A mature female bear weighs 150 to 185 pounds, and a male bear weighs about 275 pounds.

Activity

1. Begin a discussion with the students about black bears.
2. Distribute "Student Data page" and "Compare Yourself to a Black Bear"
3. Have the students use the information on bear biology to help them complete the chart.
4. Ask students for their ideas about how long sows are pregnant, what bear cubs eat when they are born, how much they might weigh when they are a year old, how many cubs might be born at the same time, how much they weigh when they are full grown, and how long they live.
5. Following the discussion, post the Weight and Age Relationships for Black Bears Chart or provide it as a handout.
6. Ask the students to plot their own weight at the same ages as the black bears shown on the chart. They will be required to estimate for years past their present age.
7. Ask the students to graph both sets of data.
8. Ask the students to compute the following and include their results with their graph and drawing:
    a. How much weight did the black bear gain at each interval- that is, from birth to 4 months, 4 months to year, etc.?
    b. How much weight did you gain during the same intervals?
    c. How many times more weight did the bear gain during each period?

9. In discussion, ask the students to comment on the similarities and differences between bears and people.
10. Students hand in worksheet when finished.