

A Year in the Life of a Black Bear

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Grades: 1-6

Subject: science, language arts, art

Skills: listening, comprehension, application, description, construction

Duration: one or two class periods

Vocabulary: denning, territory, bears nest, White Sucker, hibernation, omnivore, habitat, behaviour

Objectives:

- Students will be able to:
- 1) identify differences in Black Bear lifestyle from season to season.
 - 2) describe how Black Bears use their habitat.
 - 3) describe the diet of a Black Bear.

Method:

Through a story students learn about seasonal variation in the life of an adult male Black Bear.

Background:

Algonquin Provincial Park is home to approximately 2000 Black Bears. During the period from 1992-1997 research was conducted on adult male Black Bears. The purpose of the study was to study the seasonal movements and feeding patterns of Algonquin's bears, something that had never been closely examined in the past. In order to accomplish this, radio telemetry collars were fitted on all adult male bears over 120 kg. Locations of individual bears were determined by telemetry fixes using aircraft or ground surveys. Any areas where a bear had spent two or more days were investigated by walking in on foot. Signs of available food sources and scat were then examined to determine feeding habits.

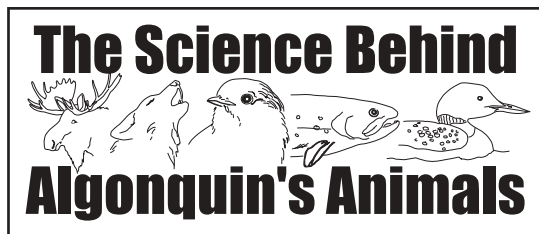
The research showed that in Algonquin Park Black Bears typically emerge from the den from late March to early April, and begin to wander within their breeding range. The breeding territories of



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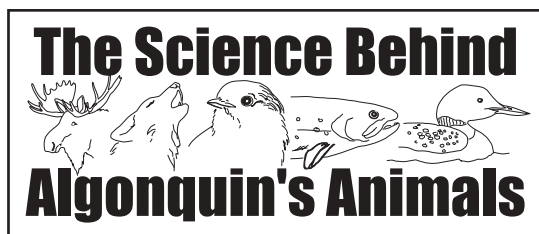
adult male bears in the Park were found to be between 19.3 km² and 87.6 km² with an average of 40 km². However, ranges after the breeding season, which include post-breeding movements, were shown to exceed 1000 km² for several males. These post breeding movements usually occur between early July and the middle of August, and last between 15 and 251 days. Of all the collared bears during the study, only two did not move outside of Park boundaries after breeding.

Upon emerging from the den in the early spring, bears will move to clearings where they will feed upon grasses. They will also feed on the catkins and leaves of aspen before more nutritious food sources become available. In the early spring, White Suckers, which are spawning in shallow creeks, are an important food source for Black Bears. During the study, several bears were observed feeding on suckers, and two of the collared bears spent between two and ten days at creeks with suckers.

Bears begin to consume soft mast, such as elderberries and strawberries, when they become available in June. As the summer progresses, other food sources such as pin and choke cherries, raspberries, juneberries, and blueberries become available and are an important food source until the fall. It is believed that the movements of bears after breeding are related to the availability of these soft mast food sources. Radio-collared bears typically moved from higher elevations to lower elevations where abundant soft mast crops were located. Typical movements were to the southeast and east, to areas where juneberry and blueberry were abundant.

By September hard mast, such as bechnuts, and Red Oak acorns become an important food source for Black Bears. The consumption of these hard mast food sources result in rapid weight gain, which is critical in the fall for survival during the winter. As with soft mast crops, bears will move to areas, often outside of Park boundaries, to where there are suitable hard mast crops. For bears in the western part of Algonquin, where there are very limited stands of Red Oak, bears often have to move to lower, drier elevations to find an abundance of acorns. If there is a bechnut crop failure, as happened in 1993, bears will also be forced to move to areas where there is an abundant bechnut crop. Upon returning from summer feeding ventures, male Black Bears will feed in beech stands which are close, or in home ranges, for a further two weeks to a month when bechnuts are readily available.





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From mid-May to mid-June predation of Moose calves is assumed to be important. During the study period, predation of Moose calves by Black Bears was observed in five instances, along with six other accounts of bears chasing cow-calf groups.

It is speculated that within Algonquin Park, where a significant number of adult male bears exist, intra-specific predation of smaller bears may occur. Two instances of cannibalism were observed during the study period. The first involved an adult male who pursued another adult male up a tree, dragged it down, killed it and partially consumed it. The other instance involved an eyewitness account of a bear eating another bear. Investigation of the carcass failed to reveal whether or not it was a case of predation or scavenging.

Apart from natural sources of food, 54% of the radio collared Black Bears ventured outside of Park boundaries to utilize garbage dumps. For most of these bears dumps provided a large, and sometimes, main source of food. Most of the feeding activity by the large adult males occurred during twilight or nighttime hours with daylight hours spent bedded down away from the dump.

The study also revealed that adult male Black Bears lead very violent lives. Numerous males showed facial scarring after the breeding season as a result of confrontations with other males. Injuries can also occur from confrontations with females that have cubs (male bears will predate cubs if given the opportunity) as well as with predation attempts towards other adult and sub-adult bears. The predation attempts on Moose calves can also be dangerous to bears as calves are often violently defended by the mother Moose. Even feeding on hard mast items such as beechnuts and acorns is not a safe activity for a Black Bear. In order to obtain these items bears must climb several metres up a tree, and occasionally a fall may occur.

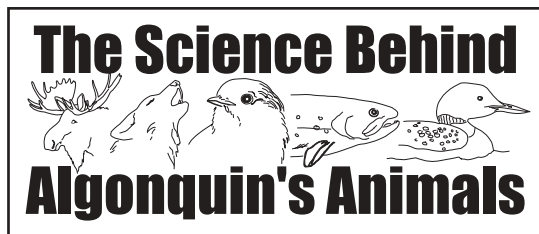
Materials:

✓	Items Required	Quantity
	story: <i>A Year in the Life of a Black Bear in Algonquin Provincial Park</i>	one per student
	markers, crayons, pencil crayons, paint	class set
	bristol board or large sheets of paper for murals	one per student



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Procedure:

For Grades 1-3:

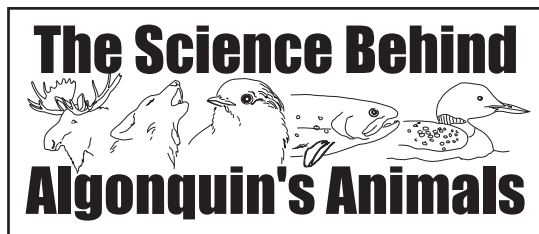
- 1) Hand out and read aloud the story, *A Year in the Life of a Black Bear in Algonquin Provincial Park*.
- 2) After completing the story, discuss the following questions with the class:
 - What do Black Bears do from late fall until early spring?
 - Do you think a bear in a zoo would need to hibernate? Why or why not?
 - What do Black Bears eat first thing in the spring?
 - What could a Black Bear be doing near a stream in early spring?
 - What other large Algonquin Park mammal will Black Bears eat in early summer?
 - What is the main food for a Black Bear in the summer?
 - What other types of food will Black Bears eat in the late spring and summer?
 - Why type of food will a Black Bear eat in the fall?
 - Where does it have to go to get this food?
 - What does this food do for a Black Bear
 - What is a bears nest?
 - Why do you think Black Bears will eat at garbage dumps?
 - Where does a Black Bear sleep during the winter?
 - How does a Black Bear stay warm during the winter?
- 3) Divide the class into four groups and assign each group one season: winter, spring, summer or fall. Each group should then design a mural depicting what a Black Bear does and where it lives during each season.
- 4) Have the students write the corresponding season at the top of each mural.
- 5) Encourage the students to show through the mural what Black Bears eat, how it gets food, what a bears' nest might look like and what a den might look like.
- 6) When completed combine the seasonal murals into one diorama to be displayed along a wall in the classroom or in the hallway.



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For Grades 4-6:

- 1) Divide the students into small groups.
- 2) Distribute copies of the story *A Year in the Life of a Black Bear in Algonquin Provincial Park* to each group to read. (This story contains all the basic information the students will need, but you may wish to have them supplement information with their own research through books or the internet.)
- 3) Using information provided in the story, have each group write, rehearse, and present a skit on one of the following topics:
 - seasonal habitat requirements
 - seasonal food preferences
 - behavior
 - denning and hibernation
- 4) Groups can design a poster, props or seasonal diorama (see mural activity for Grades 1-3 above) to use while presenting their skits.
- 5) Have students ask questions of each group after each skit.

Variations:

- 1) Have students create a comic strip on a year in the life of a Black Bear
- 2) Have students research and write a story on a year in the life of another animal found in Algonquin Provincial Park.

Extensions:

Have students research a year in the life of a Grizzly Bear or Polar Bear and report on similarities and differences compared to Black Bears.




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Evaluation:

Ask students to:

- 1) Create their own personal mural of one aspect of a Black Bear's life on 8 x 11 paper and hand in.
- 2) Research and write their own story about the year in the life of a female Black Bear with cubs, or the first year of a Black Bear cub.



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