



Bears of Glacier Bay National Park

Middle School Scientists Curriculum

Investigation 3: Be Bear Aware

Overview:

Students will become “bear aware” by exploring ways to reduce human-bear interactions and applying them to different real-life scenarios. They will use critical thinking skills to make a list of considerations when camping, hiking, fishing, and at home. Students will conclude by creating a “Bear Aware Campaign” by making posters, creating podcasts or videos, or writing news stories.

Background Information:

Bears are magnificent and fascinating animals, both loved and feared by humans. Bear and human interactions occur intentionally and unintentionally. Visitors to national parks and other wilderness areas often come expressly to see bears in the wild, while other visitors accidentally encounter bears while hiking, fishing, or camping. Additionally, some people see bears in their own towns, lured there by food and trash. When bears and humans come into close proximity, there is the potential for conflict.

A little knowledge about bear habits, behavior, and physiology can go a long way in keeping bears and humans safe. Generally, bears are timid but also curious. They will avoid hikers and campers, but they need to know that people are around. While bears have an excellent sense of smell their eyesight and hearing is less acute. Making noise, especially when walking through thick underbrush or near rushing water, will alert bears to the presence of humans. When bears are aware of people in an area, they are less likely to react defensively if surprised.

Bears are also driven by the quest for food. Their excellent noses can direct them to food from a long distance away. Bears are very good at finding ways into food containers, including opening chest freezers, getting into parked cars, opening dumpsters and more. Proper care and storage of food and trash in bear country is important. This includes storing food in **bear resistant food containers (BRFC)** while camping, putting

Class Time Required	1 class period (50 minutes)
Materials Needed:	Depends on what kind of PSA the students want to make. Necessary materials could include: <ul style="list-style-type: none"> • Computers with publishing software • Internet access • Poster paper and paints
Teacher Preparation:	20 minutes to review background information and select parameters for the PSA.
Student Knowledge:	Basic understanding of bear behavior and physiology, bear safety
Vocabulary:	bear resistant food container (BRFC), food conditioned, habituated, haze
National Content Standards	<ul style="list-style-type: none"> • NS.5-8.3 Life Science • NS.5-8.6 Personal and Social Perspectives

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trash in bear-proof trash cans, keeping pet food inside, and only putting bird seed in feeders in the winter while bears are hibernating.

Bears that have gotten food from human sources are considered **food conditioned** and they are likely to try again. Conflict happens when bears are trying to get food from people. Bears that regularly occupy developed areas are **habituated** to people and have lost their fear of them. The potential for conflict increases when bears are habituated or food conditioned. One solution is to **haze** bears. Park managers may fire rubber bullets at a bear or make loud noise in order to discourage a bear from approaching people. If hazing does not work, a bear may need to be destroyed.

People enjoying the outdoors in bear country need to be aware of these facts in order to keep themselves and bears safe. It is important that anglers do not let bears get their catch because the bears will return to get fish from other anglers. If a bear is seen, it is important to talk to the bear to let it know someone is there. Bears can move quickly and people should not run from bears and in no case should food be thrown to a bear. While camping, food should be prepared away from the tent and stored in a BRFC or hung from a tree. These measures can help keep people and bears safe.

By being prepared, you can plan how you will react if and when you meet a bear. A few ways include:

1. Make your presence known – bears don't like to be surprised.
2. Travel with a group – bears are more likely to approach one or two people.
3. Don't approach bears – if not seen, slowly walk away or leave the area.
4. Make eye contact – if bear sees you, making eye contact can help gauge bear's behavior.
5. Keep calm - if you get excited, the bear could too.
6. Keep areas around the home clear of garbage, pet food, or other food items (including bird seed).
7. Don't run from a bear – a bear can outrun you!

Focus Questions:

What causes bear-human conflict?

How can bear and human conflicts be avoided?

How can park managers protect people and bears?



Engagement:

(15 minutes)

Engage the students in a discussion of safety in bear country. Some knowledge of bear behavior and habits goes a long way in keeping bears and humans safe. What can people do at their homes to keep bears wild? What should people do while they are recreating to avoid conflict with bears? What should people do if they encounter bears? In each situation, forethought and awareness can help keep bears and humans safe.

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Investigation: **(30 minutes)**

1. Students will create a bear safety awareness campaign. They can work alone or in small groups. Review with the students ways to stay safe in bear country.
2. After reviewing bear safety, students can choose a bear safety scenario to make into an awareness campaign. Each group or pair could choose a different scenario. Possible scenarios include:
 - overall bear safety
 - safety while hiking or walking in bear country
 - safety while fishing or hunting
 - safety while camping
 - making a home and yard safe for bears
3. Have students develop a campaign related to bear safety in these situations. They could make posters, podcasts or video, write a catchy jingle, write news stories, and more. The materials needed will depend on the media used in the bear awareness campaign.
4. After creating their Bear Awareness message, have each group present their bear safety message to the rest of the class.

Explanation: **(10 minutes)**

Discuss with the students how their knowledge of bear behavior helps them keep people and bears safe. As a group, have the students create a list of ideas that park managers could do to keep bears and humans safe.

Extension:

Find a story about bear-human conflict in the news. Have the students discuss what should happen to the bear. How could the incident have ended differently? What could have been done to avoid the incident?

The British Columbia Bear Aware campaign posts bear news stories at: <http://www.bearaware.bc.ca>

References/Resources:

Alaska Department of Fish and Game

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

Bear aware: British Columbia Conservation Foundation

<http://www.bearaware.bc.ca/>

How to Stay Safe in Bear Country

<http://www.env.gov.yk.ca/environment-you/bearsafety.php>

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National Education Science Standards Addressed: Grades 5-8

NS.5-8.3 Life Science

Regulation and Behavior (5-8):

- Behavior is one kind of response an organism can make to an internal or environmental stimulus. A behavioral response requires coordination and communication at many levels, including cells, organ systems, and whole organisms. Behavioral response is a set of actions determined in part by heredity and in part from experience.
- An organisms' behavior evolves through adaptation to its environment. How a species moves, obtains food, reproduces, and responds to danger is based in the species' evolutionary behavior.

NS.5-8.6 Personal and Social Perspectives

Personal Health (5-8):

- The potential for accidents and the existence of hazards imposes the need for injury prevention. Safe living involves the development and use of safety precautions and the recognition of risk in personal decisions.

Natural Hazards (5-8):

- Human activities also can induce hazards through resource acquisition, urban growth, land-use decisions, and waste disposal. Such activities can accelerate many changes.
- Natural hazards can present personal and societal challenges because misidentifying the change or incorrectly estimating the rate and scale of change may result in either too little attention or too much cost for unneeded preventive measures.

Risks and Benefits (5-8):

- Individuals can use a systematic approach to thinking critically about risks and benefits. Examples include applying probability estimates to risks and comparing them to estimated personal and social benefits.
- Important personal and social decisions are based on perceptions of benefits and risks.