Activity 2.1
Unobtrusive Observation
or "The Spy Who Went Out In the Cold"

Teacher Background

The shores and oceans around Antarctica are home to about 100 fish species; six seal species, comprising two-thirds of the world's seals; several whale species, including the blue, fin, sei, humpback, sperm and right whales; more than 50 species of birds, including seven penguin species, which make up the largest percentage: the total population of birds breeding on Antarctica is estimated at over 100 million. Current and potential threats to Antarctica include exploitation of wildlife through over-fishing and hunting; an uncontrolled influx of tourists; destruction of the ozone layer and the resulting increase in ultra-violet radiation which could impact the phytoplankton upon which krill feed, and thus affect the food web of the Southern Ocean; and mining of the continent's anticipated mineral wealth (currently restricted by the Antarctic Treaty).

All researchers in Antarctica operate under the terms of the Antarctic Conservation Act, an extension of the Antarctic Treaty. The USAP has especially strict guidelines about "taking" wildlife, which is defined as anything which changes their behavior, from disturbing creatures while filming them to necessary direct contact as when obtaining blood or other physiological samples for research purposes. This Activity puts students in the shoes of researchers who need to get up close and personal with wildlife, without changing natural behavior more than is absolutely required.

Objective

Students will collect behavioral data on domestic "wildlife" and "animal behavior", exposing themselves to problems inherent in unobtrusive close observation.

Materials

- wrist or pocket watch with automatic alarm feature
- small notebook and pencil to record observations

Engage

Post the questions below and allow students 2-3 minutes to write their responses. Ask students how accurate these observations are? Are they "scientific?" "Objectively correct?" Why or why not?

- Where were you and what were you doing at exactly 7:25 a.m. today?
- At 1:18 p.m. last Saturday?
- Who was you with?
- Without looking down, what color are the socks you put on this morning? Your shirt?

Explain/Explore

Researchers interested in animal behavior train themselves to observe their surroundings with care. With some of the skills and hi-tech tools of James Bond, Agent 007, scientists are environmental spies who use whatever is available-from their senses to computers to satellites-to help them understand the creatures they're studying, without changing their behavior by the very act of studying them. Have students brainstorm real-world examples of such tracking. Some examples might include: the annual Audubon Christmas Bird Count; whale watching; one-way windows in research centers, lab schools and hospitals; hidden cameras in department stores; satellite tracking systems, sonar and radar. Once the "raw data" is collected, researchers organize and work on it until they see meaningful patterns in graphs or statistics, which allow them to make predictions about future behavior which can be tested. If the predictions are confirmed, then researchers can begin to postulate conclusions.

Procedure

1. Distribute Activity 2.1 Student Worksheet, "Unobtrusive Observation". Allow time for students to read; discuss procedural steps and answer questions. Decide on appropriate date by which all students will have completed the assignment.
2. When all students have completed this Activity, schedule time for sharing experiences. What general conclusions can be drawn? Discuss problems students may have encountered in observing humans-what parallels can be made in regard to observing animals in their natural habitats?

Expand/Adapt/Connect

Observing and Recording Animal Behavior

1. Working in pairs, students can unobtrusively observe a preschool or kindergarten class during free play, either in class, or on the playground. Record individual differences in behavior. Are some children aggressive? Non-aggressive? Watchful? Impulsive? Social? Loners? Are there gender differences? Are there correlations of behavior with size?
2. Next, arrange for the teacher to quietly place a bag of lollipops or M&M's in a prominent place in the room where anyone can take one. Observe and note what happens in terms of traffic patterns. How does the introduction of a food cache change animal behavior?
3. Have students be on the lookout for the different sampling and observation techniques employed by the researchers seen during LFA 2, and write an essay on the "Perils and Pleasures of Observing Antarctic Wildlife" as part of a Closing Activity.

Have students create and compare different types of graphs showing how they use their time (sleeping, reading, eating, studying, watching TV, etc.)

Suggested URLs

WhaleNet's STOP (Satellite Tagging Observation Program) whale and seal tracking via satellite
http://whale.wheelock.edu/whalenet-stuff/stop_cover.html