

Animal Instincts: Teacher's Guide

Grade Level: 5-6

Curriculum Focus: Animals

Lesson Duration: Two class periods

Program Description

Humpback whales swim 3,000 miles to mate. Polar bears can wander hundreds of miles and always find their way home. Chimpanzees use tools to gather food. How do they do it? *Marine Migration* – Summers off the coast of Alaska. Winters off the coast of Maui. Discover why the North Pacific humpback whale makes this annual odyssey. *Hibernation and Homing* – See how bears use their homing instinct to return from far-away journeys for food, and learn what happens during hibernation. *Parenting Principles* – Watch parents teach baby primates in Borneo's jungles how to groom, build nests, and find safe leaves to eat.

Onscreen Activities

Segment 1, Marine Migration

- Activity: On a map of the world, trace the migration of humpback whales. Then find out about the migrations of other species and plot those on your map as well. How do they compare to the migration of the humpbacks?

Segment 2, Hibernation and Homing

- Activity: Write a story about a year in the life of a bear. Then illustrate your story to show the different locations that the bear would visit during the year.

Segment 3, Parenting Principles

- Activity: Make a chart with two categories: instincts and learned behaviors. Fill in the two sides of the chart with examples of primate behavior from the program. Then share your chart with your classmates.
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Lesson Plan

Student Objectives

- Understand the difference between instinct and learned behavior.
- Understand how an animal's instincts and behaviors help it to survive.
- Understand the connection between environment and behavior.

Materials

- *Animal Instincts* video and VCR, or DVD and DVD player
- Paper for writing and drawing assembled into a log
- Reference materials for researching animals
- Dice (number cubes)
- Computer with Internet access

Procedures

1. Explain to students that certain behaviors contribute to an animal's survival. For example, bears can adapt to harsh winters by hibernating, and humpback whales migrate from their nurseries off the coast of Hawaii to feed in the krill-rich waters off of Alaska. Explain that some of these behaviors are instincts, or traits that the animal is born with, and some are learned behaviors, or behaviors that were taught to the animal, often by its parent. For example, proboscis monkeys have an instinct for swimming (they never learn how to do it), but they must learn ways to cross a crocodile-infested river safely. Humans instinctively use their voices to communicate (newborn babies cry when they want something), but in order to speak, they must learn their language. Dolphins instinctively know how to swim, but trainers at an aquarium can teach them to swim certain ways—or do “tricks”—on command. Many young animals, such as wolf and dog pups and lion kits, are born with an instinct for rough play with their siblings, but some may learn the hard way not to play rough with a larger adult of the species. Discuss the behaviors of other animals (such as salmon, bats, and lions) and whether they are instinct or learned behaviors.
2. Put students into cooperative groups of three or four. Explain that they are going to use the luck of the die to select an animal about which they will learn more. Give each group one number cube (or die) and have them roll it twice to get the following information:
 - First roll (kind of vertebrate): 1 or 2 = mammal, 3 or 4 = reptile, 5 = bird, 6 = amphibian
 - Second roll (size): 1 or 2 = small (1 ounce to 30 pounds), 3 or 4 = medium (31 to 99 pounds), 5 or 6 = large (100 pounds and over)
3. Using these parameters, have each group find an animal that its members would like to learn more about. One Web site that help is Cyber Zoomobile, found at:
<http://home.globalcrossing.net/~brendel/>.
4. Have students create an image of their animal. They could create a drawing, a computer image, or a three-dimensional composition. Have them label their image, identifying major body parts and unique physical characteristics of the animal.
5. Each group will be preparing three pages about their animal, titled Diet, Habitat, and Behaviors. Students will be using reference materials to research and write a brief description. On each page, have each group member initial his or her written contribution to the description.



- **Diet:** Describe the animal's diet. What kind of food does your animal eat? Is your animal a meat eater (carnivore), a plant eater (herbivore), or does it eat both plants and animals (omnivore)?
 - **Habitat:** Describe the animal's habitat. Where does it live? What is the weather like? What other plants and animals live there?
 - **Behaviors:** Create individual lists of all the behaviors you can find for your animal.
6. As a class, discuss the following questions about each animal's behavior: How did your animal acquire each behavior? Which of your animal's behaviors are learned and which are instinctual? Are any of your animal's behaviors linked to the environment or climate in which it is found? How so? How does it adapt to seasonal changes? Do the animal's physical characteristics help it in any way? Have group members identify which of the behaviors on their animal behavior list are instinctual and which are behavioral.
 7. Using group research, have each student compose a creative short story about his or her animal's life during one of the four seasons of the year. Stories should reflect their group research, describing the animal's environment, climate, diet, food, and physical attributes, and how they all affect animal behavior. These stories and the group images can be displayed for the entire class. Challenge students to try to identify the learned and instinctual behaviors of the animals in their classmate's stories.

Discussion Questions

1. Debate which instinct—hibernation (staying inactive during winter months) or homing (always knowing how to find your way home)—is more important to a bear's survival. Give reasons for your arguments.
2. How do the physical attributes of an animal affect its behaviors? Using whales, primates, and bears as examples, discuss how their physical characteristics affect their instinctive behaviors. Is there any link between those characteristics and their learned behaviors?
3. Can an organism's instincts and learned behaviors be related to its environment? Think about this: In order to survive, a polar bear instinctively goes into "winter sleep" to conserve its energy when it has gone about two weeks without food, which can be scarce in the Arctic. What is the behavior-environment connection? Discuss other animals that demonstrate behaviors related to their environment.
4. Analyze some behaviors that both humans and animals display. Examples might include growling, purring, crying, or playing. Then discuss whether they are instincts or learned behaviors. For every learned behavior, explain how it was learned. Was it taught by a parent or learned through some other experience?
5. Compare animal adaptations to behaviors that humans show. For example, proboscis monkey mothers must teach their young which leaves are safe to eat. What are some similar behaviors that humans show? Think about other animal adaptations, such as migration, hibernation, primate grooming, and teaching young to use tools. What human behaviors remind you of these adaptations?



6. A mother grizzly bear instinctively raises and protects her young cubs. Yet after a mother iguana lays eggs, her job as a mother is finished. Explain why you think some animals have a strong instinct for parenting while others do not. How might it relate to the number of babies or amount of eggs it produces?
7. Create a list of 20 of your own behaviors throughout the day, such as waking up, brushing your teeth, walking, eating, or reading. Which of these are learned and which are instinctual? If they were learned, how did you learn them?
8. Think about all the actions you've performed in the last few hours (preparing for class, answering questions, eating, showering, etc.). Have you demonstrated more instinctive behaviors or learned behaviors? Debate which behaviors are more common in everyday life.
9. Explain the various ways in which learned behaviors can be learned. For example, how did you learn to tie your shoes? How did you learn that it's best keep your eyes closed when you're washing shampoo out of your hair? Brainstorm other examples to discuss.

Assessment

Use the following three-point rubric to evaluate students' work during this lesson.

- 3 points: Students actively participated in group project; created a clear image, identifying several major body parts; created thorough, complete descriptions of their animal's habitat, diet, and behaviors; identified several instances of instincts and learned behavior; developed creative stories with several details about the animal's behaviors.
- 2 points: Students participated in group project; created an adequate image, identifying some major body parts; created a satisfactory description of their animal's habitat, diet, and behaviors; identified some instances of instincts and learned behavior; developed stories some details about the animal's behaviors.
- 1 point: Students was not engaged in group project; created an incomplete image, identifying few or no body parts; created an incomplete description of their animal's habitat, diet, and behaviors; identified few instances of instincts and learned behavior; developed stories with little or no details about the animal's behaviors.

Vocabulary

bubblenetting

Definition: A feeding technique used by whales in which they trap fish in a circle of underwater bubbles created by their blowholes; when the bubbles reach the surface, a whale group synchronizes their movements and surfaces in unison, filling their mouths with fish.

Context: Humpback whales use a fascinating feeding technique called bubble netting.

den

Definition: The lair of a wild, usually predatory, animal.

Context: When a bear begins to be lethargic, it will search for an area sheltered from the weather to make a den.



hibernation

Definition: To pass the winter in a resting state.

Context: Hibernation occurs when an animal remains inactive to save energy through the harsh winter.

homing

Definition: To return accurately to one's home or natal area from a distance.

Context: Polar bears are born with a homing instinct that always helps them find the most direct way home.

instinct

Definition: A natural or inherent aptitude, impulse, or capacity.

Context: For proboscis monkeys, excellent swimming is an instinct, or a behavior that an organism is born with.

learned behavior

Definition: A behavior that an organism must learn.

Context: For orangutans, building a nest correctly is a learned behavior, or a behavior that an organism must learn.

migration

Definition: The act of moving from one country, place, or locality to another.

Context: Animals such as humpback whales and monarch butterflies go through a yearly migration, temporarily changing their habitat in order to survive.

Academic Standards

National Academy of Sciences

The National Science Education Standards provide guidelines for teaching science as well as a coherent vision of what it means to be scientifically literate for students in grades K-12. To view the standards, visit <http://books.nap.edu>.

This lesson plan addresses the following science standards:

- Life Science: The characteristics of organisms; life cycles of organisms

Mid-continent Research for Education and Learning (McREL)

McREL's Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education addresses 14 content areas. To view the standards and benchmarks, visit <http://www.mcrel.org/>.

This lesson plan addresses the following national standards:

- Science: Knows about the diversity and unity that characterize life.



- Science: Understands the genetic basis for the transfer of biological characteristics from one generation to the next.
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