Critter Scope

Did you ever wonder what life is like under water?

Well now is your chance to find out where different insects and their larvae or nymphs live in a stream. The critter scope is an exploring tool that can peek into the lifestyles of the wet and wiggly world.

Materials

- a can opener
- a clean coffee can or large juice can
- waterproof tape or duct tape
- clear plastic wrap
- a large and strong rubber band
- scissors

Procedure

1. Carefully remove both ends of the can and cover sharp edges with tape.
2. Place plastic wrap around one end of the can, leaving about one inch extra around the edge.
3. Put a rubber band around the can and plastic to keep the plastic wrap tight.
4. Cut excess plastic wrap away and put tape over the rubber band and plastic wrap.
5. Take your critter scope for a test run in a sink. Look through the open end and place the closed end (the one with the plastic on it) in the water.
6. Now you are able to visit the wet and wiggly world of a stream.

Note: You might want to try using a clear plastic cover from a fast food salad as a critter scope too!

Wetland Inhabitant Word Search

Search for the types of animals found in wetlands. See if you can find:

beaver	**flounder**	**wood duck**	**clam**	**crab**
crayfish	**mosquito**	**raccoon**	**heron**	**bear**
frog	**egret**	**dragonfly**	**sunfish**	**mink**
turtle	**shrimp**	**salamander**		

A	O	O	T	X	B	Z	T	D	A	Q	L	X	A	T	L	M
T	H	C	U	W	O	O	D	D	U	C	K	X	T	S	X	C
B	E	L	R	A	C	C	S	T	C	R	A	B	T	F	O	R
C	R	T	T	S	M	I	N	K	F	G	C	G	F	B	S	A
S	O	N	L	T	S	S	M	O	S	Q	U	I	T	O	U	Y
B	N	T	E	O	Q	R	S	T	A	O	C	U	X	N	N	F
E	L	R	T	S	O	P	X	P	P	A	B	E	A	R	F	I
A	C	C	X	T	S	H	R	I	M	P	L	L	N	A	I	S
V	D	R	A	G	O	N	F	L	Y	N	T	S	S	C	S	H
E	T	V	V	U	Q	Q	R	L	U	I	V	I	L	C	H	O
R	E	G	R	E	T	X	O	T	V	N	Z	A	T	O	X	O
V	X	S	G	N	A	Z	G	X	T	V	M	V	S	O	A	O
X	S	A	L	A	M	A	N	D	E	R	N	Q	X	N	N	L
N	L	T	F	L	O	U	N	D	E	R	L	I	T	T	O	L

Objectives

Students will:

1. understand the difference between instinct and learned behavior
2. understand how an animal's instincts and behaviors help it to survive
3. understand the connection between environment and behavior

Lesson Plan Support

Video

Animal Instincts

Buy this video
VHS

Related Content :

Discovery Student Adventures

Materials

For this lesson, you will need:

- Paper for writing and drawing assembled into a log
- Reference materials for researching animals
- Dice (number cubes)
- Computer with Internet access

Animal Behavior worksheet

Animal Environment worksheet

Procedures

1. Explain to students that certain animal behaviors contribute to 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) that it is to roll 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 might be of use in this process is Cyber Zoomobile, found at.
4. Once the groups have selected an animal, have them create an image of it—such as a drawing, a computer image, or a three-dimensional composition. The rendering should be labeled, identifying major body parts and unique physical characteristics of the animal.
5. Each group should prepare three pages, titled Diet, Habitat, and Behaviors. In the next three steps, the groups will be working together to complete these pages.
6. Have groups use the reference materials to research and write a brief description of their animal's diet. Each group member should initial his or her written contribution to the description. Ask groups to consider what kind of food their animal eats. Is their animal a meat eater (carnivore), a plant eater (herbivore), or does it eat both plants and animals (omnivore)?
7. Next, have groups write a description of their animal's habitat. Again, each member should initial his or her written contribution to the description.
8. Now have group members create individual lists of all the behaviors they can find for their chosen animal. Discuss the following questions with the class: 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.
9. 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 will include the results of students' group research, describing environment, climate, diet, food availability, and physical attributes and how they all affect animal behavior. These stories and the group artistic renderings 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.

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Adaptations

Adaptation for younger students:
If your students are younger, hold a class discussion about human behaviors—such as eating, writing, and sleeping. Explain that like people, animals have their own behaviors. As a class, think of four animals: a mammal, a reptile, a bird, and an amphibian. Then come up with a list of behaviors for each of those animals. Ask students to choose one animal and illustrate the one behavior.

Ask them to explain how this behavior helps the animal survive.

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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.

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Evaluation

Use the following rubric to assess student' performance on their log

- Log records instances of instinct and learned behavior in the animal (1 to 4 points)
- Group descriptions of animal's habitat and diet (1 to 4 points)
- Creative stories are clearly written and diagrams/illustrations support the writing. (1 to 4 points)

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Extensions

Behavior Basics
Lead a discussion on the various behaviors shown by primates. Have students make a chart with two categories: instincts and learned behaviors. They should fill in the two sides of the chart with specific examples, then share with classmates.

A Bear's Business
Have students write a short story about the life of a bear. They should make a map to accompany the story that shows the location of the den where it hibernates and the areas where it looks for food before using its homing instinct to return home.

Blending Behaviors
When up North, humpback whales use a tactic called bubble netting to hunt food. Bubble netting is part instinct and part learned behavior. Have students research this behavior and lead a discussion on which aspects are instinctive and which require learning. Then have students make a web that lists other behaviors in the animal kingdom that are a combination of instincts and learned behaviors.

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Suggested Readings

Do Not Disturb: The Mysteries of Animal Hibernation and Sleep, Vol. 1
Margery Flacklam, Pamela Johnson. Little, Brown & Company, 1997.
Excellent source of information on the process of hibernation and sleep in mammals, birds and fish. Clearly defines the three types of hibernation, provides examples and utilizes the latest research in animal survivor.

They Swim the Seas: The Mystery of Animal Migration
Seymour Simon, Elsa Warnick (Illustrator). Browndeer Press, 1998.
Award-winning science writer Seymour Simon explains the migration journeys of nine marine animals. Colorful illustrations, amazing facts and a lyrical text will fascinate and enthrall young readers.

The Chimpanzee Family Book
Jane Goodall, Lessie J. Little, Michael Neugebauer (Photographer). North –

South Books, 1997.
Primatologist Jane Goodall provides an intimate look into the life of a chimpanzee family she studied for many years. The relationships of the family, their personalities and environment are conveyed through riveting text and excellent photographs.

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Links

Cyber Zoomobile
This site provides educational commentary and photographs on a number of animals, focusing on each animal's unique behaviors.

Science Made Simple
This site answers the question "How do animals spend the winter?" with pictures and text targeted to elementary school students.

Baleen Whales
This research-friendly site provides general and sighting information on humpback whales, a world map that shows their migration and distribution, and brief excerpts from current research.

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Vocabulary

Click on any of the vocabulary words below to hear them pronounced and used in a sentence.

bubble netting
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.