

Animal Behavior

Teacher's Guide



Editors:

Brian A. Jerome, Ph.D.
Stephanie Zak Jerome

Assistant Editors:

Anneliese Brown
Hannah Fjeld
Louise Marrier

Graphics:

Lyndsey Canfield
Dean Ladago
Fred Thodal

A Message from our Company . . .

Visual Learning is a Vermont-based, family-owned company specializing in the creation of science programs. As former classroom science teachers we have designed our programs to meet the needs and interests of both students and teachers. Our mission is to help educators and students meet educational goals while experiencing the thrill of science!

Viewing Clearances

The video and accompanying teacher's guide are for instructional use only. In showing these programs, no admission charges are to be incurred. The programs are to be utilized in face-to-face classroom instructional settings, library settings, or similar instructional settings.

Duplication Rights are available, but must be negotiated with the *Visual Learning Company*.

Television, cable, or satellite rights are also available, but must be negotiated with the *Visual Learning Company*.

Closed circuit rights are available, and are defined as the use of the program beyond a single classroom but within a single campus. Institutions wishing to utilize the program in multiple campuses must purchase the multiple campus version of the program, available at a slightly higher fee.

Video streaming rights are available and must be negotiated with the *Visual Learning Company*.

Discounts may be granted to institutions interested in purchasing programs in large quantities. These discounts may be negotiated with the *Visual Learning Company*.

Use and Copyright:

The purchase of this video program entitles the user the right to reproduce or duplicate, in whole or in part, this teacher's guide and the black line master handouts for the purpose of teaching in conjunction with this video, *Animal Behavior*. The right is restricted only for use with this video program. Any reproduction or duplication, in whole or in part, of this guide and student masters for any purpose other than for use with this video program is prohibited.

The video and this teacher's guide are the exclusive property of the copyright holder. Copying, transmitting, or reproducing in any form, or by any means, without prior written permission from the copyright holder is prohibited (Title 17, U.S. Code Sections 501 and 506).

Copyright © 2008

ISBN 978-1-59234-226-6

Table of Contents

| | |
|-----------------------------------|----|
| A Message from our Company | 2 |
| Viewing Clearances | 2 |
| Use and Copyright | 2 |
| National Standards Correlations | 4 |
| Student Learning Objectives | 5 |
| Assessment | 6 |
| Introducing the Program | 7 |
| Program Viewing Suggestions | 7 |
| Video Script | 8 |
| Answer Key to Student Assessments | 12 |
| Answer Key to Student Activities | 13 |
| Pre-Test | 14 |
| Post-Test | 16 |
| Video Review | 18 |
| Vocabulary | 19 |
| Writing Activity | 20 |
| Types of Behaviors | 21 |
| The Adaptive Sandhill Crane | 22 |
| What Is That Behavior? | 24 |

National Standards Correlations

Benchmarks for Science Literacy

(Project 2061 – AAAS) Grades 3–5

The Human Organism - Human Identity (6A)

By the end of fifth grade, students should know that:

- Unlike in human beings, behavior in insects and many other species is determined almost entirely by biological inheritance.

The Human Organism - Learning (6D)

By the end of eighth grade, students should know that:

- Some animal species are limited to a repertoire of genetically determined behaviors; others have more complex brains and can learn a wide variety of behaviors. All behavior is affected by both inheritance and experience.

National Science Education Standards

(Content Standards: K–4, National Academy of Sciences)

Life Science - Content Standard C

As a result of their activities in grades K-4, all students should develop an understanding of:

The Characteristics of Organisms

- The behavior of individual organisms is influenced by internal cues (such as hunger) and by external cues (such as a change in the environment). Humans and other organisms have senses that help them detect internal and external cues.

Life Cycles of Organisms

- Many characteristics of an organism are inherited from the parents of the organism, but other characteristics result from an individual's interactions with the environment. Inherited characteristics include the color of flowers and the number of limbs of an animal. Other features, such as the ability to ride a bicycle, are learned through interactions with the environment and cannot be passed on to the next generation.

Student Learning Objectives

Upon viewing the video and completing the enclosed student activities, students will be able to do the following:

- Define animal behavior as the actions living things carry out to survive and reproduce.
- Explain that most behaviors are a type of adaptation. Differentiate between physical and behavioral adaptations.
- List an example of a type of behavior that helps an animal survive.
- Understand that most animal behavior occurs as a reaction to a stimulus. Stimuli can either be external, as in a change in the environment, or internal, as in a signal within the animal.
- Cite examples of both internal and external stimuli.
- Describe the difference between instinctive behaviors, which animals are born with, and learned behaviors, which animals develop with experience.
- List some types of behaviors, including survival behaviors, communication and social behaviors, courtship behaviors, and seasonal behaviors.
- Provide examples of survival behaviors, such as camouflage.
- Explain the importance of courtship behaviors in locating a mate and reproducing.
- Identify different seasonal behaviors, such as hibernation and migration.
- Give examples of communication and social behaviors, such as bird songs.

Assessment

Preliminary Test (p. 14–15):

The Preliminary Test is an assessment tool designed to gain an understanding of students' preexisting knowledge. It can also be used as a benchmark upon which to assess student progress based on the objectives stated on the previous pages.

Post-Test (p. 16–17):

The Post-Test can be utilized as an assessment tool following student completion of the program and student activities. The results of the Post-Test can be compared against the results of the Preliminary Test to assess student progress.

Video Review (p. 18):

The Video Review can be used as an assessment tool or as a student activity. There are two sections. The first part contains questions displayed during the program. The second part consists of a five-question video quiz to be answered at the end of the video.

Introducing the Program

Before showing the program to your students, write the term “behavior” on the board. Ask students to try to formulate a definition of this word. A behavior is an action a living thing performs. Animals, including humans, perform a variety of behaviors everyday. Ask students to write down three behaviors they have carried out today. Make a class list of the behaviors on the board.

After the list is complete, ask for two volunteers. Tell the class to observe closely. Gently toss a sponge or wad of paper at one student’s forehead. What did the class observe? The student probably blinked their eyes, or maybe tried to avoid being hit. Ask students if their classmate had to think or learn how to do this behavior. This type of action is an example of an instinctive behavior, also called an innate behavior. Now ask the other volunteer to catch the sponge or piece of paper. Ask the class how this type of behavior is different. This is an example of an acquired behavior, also called a learned behavior. We are not born with acquired behaviors. Instead, we must learn them throughout the course of our lives. Tell students to pay close attention to the video to learn more about animal behaviors.

Program Viewing Suggestions

The student master “Video Review” (p. 18) is provided for distribution to students. You may choose to have your students complete this master while viewing the program or do so upon its conclusion.

The program is approximately 14 minutes in length and includes a five-question video quiz. Answers are not provided to the Video Quiz in the video, but are included in this guide on page 12. You may choose to grade student quizzes as an assessment tool or to review the answers in class.

The video is content-rich with numerous vocabulary words. For this reason you may want to periodically stop the video to review and discuss new terminology and concepts.

Video Script

1. Have you ever watched an animal look for food...
2.or seen an animal defend its territory?
3. Maybe you have admired a flock of geese migrating.
4. If you have had any of these experiences, then you have observed animal behavior.
5. What is animal behavior?
6. What are some different types of animal behavior?
7. And why is animal behavior important?
8. During the next few minutes, we will investigate these questions and others...
9. ... as we explore the fascinating topic of animal behavior.
- 10. Graphic Transition – What is Behavior?**
11. This lizard, called an anole, is lowering and raising its head and chest...
12. ...while at the same time extending a flap of skin under its neck.
- 13. You Decide!** What does this action mean?
14. In this situation the action is a warning for other animals to go away. It is a type of behavior. Sometimes this behavior is also used to attract a mate.
15. Animal behavior consists of the actions living things perform.
16. Animals perform a wide range of behaviors that help them obtain food, avoid predators, and find a mate, to name just a few.
17. Let's take a quick look at why animal behavior is important.
- 18. Graphic Transition – Why Behavior is Important**
19. Most behaviors are a type of adaptation. Adaptations are characteristics which help living things to survive and to reproduce.
20. Body shape, sharp claws, coloration, and other characteristics are all adaptations which help these marine iguanas survive.
21. The long legs of this heron enable it to wade in shallow water, while its pale coloring blends in with the sky above, helping to camouflage it from its prey in the water.
22. Strong eyesight enables it to spot prey just below the water's surface.
23. Its slender neck and sharp, long bill enable it to quickly capture fish.
24. These physical features are all adaptations.
25. The way it gets food, such as wading in water, remaining still, and then quickly snatching prey are behavior adaptations.
26. Most behavior involves an animal reacting to something in its environment.
27. A stimulus is a signal or change in the environment or a change within a living thing.
28. A response is an organism's reaction to a stimulus.
29. For example, the sound of a person knocking on a door is a stimulus.
30. This dog responds to the stimulus by barking.
31. Animal behavior is caused or initiated by a stimuli.
32. Many stimuli are external, meaning the stimuli are in an organism's surrounding environment.

Video Script

33. Some stimuli, though, are internal and are initiated inside an animal, such as the stimulus of hunger.
- 34. Graphic Transition – Instinctive and Learned Behavior**
35. If a ball were thrown to your face, would you blink?
36. This girl is playing the piano from music she has memorized.
- 37. You Compare!** What is the difference between these two actions?
38. The first action is an example of instinctive behavior, also called innate behavior. The person hardly thinks about their response, they just do it.
39. Whereas, the action of the girl playing the piano is an example of a learned behavior, which took a lot of practice.
40. Instinctive behaviors are behaviors living things are born with and do not need to learn.
41. For example, a newborn calf knows how to drink milk from its mother.
42. Fishes instinctively swim and spiders instinctively know how to spin webs.
43. Animals with more developed brains, such as birds and mammals, have many instinctive behaviors, but they also have a greater capacity to learn complex activities.
44. Learning is any change in behavior that results from experience. Learned behavior is also called acquired behavior.
45. Learned behaviors are usually not done perfectly the first time.
46. Reading, playing music, speech, and playing sports are all examples of learned behaviors.
47. The learned behaviors of most animals depend on characteristics and adaptations acquired from their parents.
48. Interestingly, the difference between innate and learned behaviors is not always clear.
- 49. Graphic Transition – Survival Behavior**
50. As we mentioned, there are many different types of animal behavior.
51. Survival behaviors are one type of behavior. Survival behaviors, such as those that enable animals to find food, help animals stay alive.
52. For example, bees fly from flower to flower gathering nectar...
53. ... and squirrels climb trees to gather nuts.
54. Another important survival behavior involves avoiding being killed or eaten by other organisms. Rabbits, for example, often stand still when they think a predator is nearby, enabling their bodies to be camouflaged.
55. Camouflage, which involves blending in with the background, helps many animals to hide from predators.
56. Other animals, such as wasps, use their stingers to attack and ward off predators.
57. Quite often animals use aggressive body positions or actions to ward off predators.
58. Other animals, such as deer, use their speed to run from predators.

Video Script

59. These are just a few examples of animals' survival behaviors.
- 60. Graphic Transition – Communication and Social Behaviors**
- 61. You Decide!** What do you think this dog is communicating?
62. Dogs and other animals don't use written or spoken language, but they do communicate.
63. For instance, it is pretty obvious that this dog is signaling to someone to stay out of its territory.
64. There are thousands of different ways animals communicate.
65. Birds can communicate with each other vocally; ...
66. ... so can male elk.
67. Some animals use body motions to communicate.
68. Honeybees, for example, communicate with each other through a dance that tells other bees where food can be found.
69. Animals also exhibit other social behaviors. For example, some animals, such as this flock of turkeys, often live in social groups. Social groups help boost an animal's chance of survival in several ways. The group works together to find food and a group can detect predators sooner than an individual.
70. Fishes often find safety in groups...
71. ... and so do deer and birds.
- 72. Graphic Transition – Courtship Behavior**
73. In order for animals to continue to exist, they must reproduce.
74. Courtship behaviors are important to many animals because they help them to locate, select, and bond with a mate.
75. Birds have some of the most dramatic courtship behaviors. For example, these male frigate birds in the Galapagos display their colorful red throats in an effort to attract females.
76. And it is thought that blue-footed boobies conduct this unusual courtship dance to attract mates.
- 77. Graphic Transition – Seasonal Behaviors**
78. The flight of Canada geese overhead,...
79. ... chipmunks hibernating for the winter,...
80. ... as well as the movement of monarch butterflies...
81. ... are all examples of seasonal behaviors. Seasonal behaviors involve actions that respond to or coincide with seasonal changes.
82. Seasonal changes often trigger an impulse in animals to hibernate...
83. ... or to begin the mating process.
84. One very noticeable seasonal behavior is migration.
85. Migration generally refers to the seasonal movement of animals from one place to another in an effort to improve chances of survival.
86. These snow geese are flying over New England in October.
- 87. You Predict!** In what direction are they migrating?
88. They are migrating south where it is easier for them to obtain food.

Video Script

89. Many different animals migrate for a wide variety of reasons.

90. Graphic Transition – Summing Up

91. During the past few minutes, we have explored the fascinating topic of animal behavior.

92. We began by defining animal behavior and discussing why it is important.

93. Instinctive and learned behaviors were compared.

94. More specifically, we investigated some of the characteristics of survival behaviors,...

95. ... communication and social behaviors,...

96. ... courtship behaviors,...

97. ... and seasonal behaviors.

98. So, the next time you hear a bird singing...

99. ... or see an animal gathering food in your neighborhood,...

100. ... think about some of the things we have discussed during the past few minutes.

101. You just might think about animal behavior a little differently.

102. Graphic Transition – Video Assessment

103. Fill in the correct word to complete the sentence. Good luck and let's get started.

1. Most behaviors involve an animal reacting to a _____.
2. _____ behaviors are developed with experience.
3. Seeking food is an example of _____ behavior
4. Birds singing is an example of animal _____.
5. _____ behaviors help animals locate, select, and bond with a mate.

Answer Key to Student Assessments

Pre-Test (p. 14-15)

1. c - adaptation
2. d - stimulus
3. a - internal
4. c - instinctive
5. b - brains
6. c - camouflage
7. a - communicating
8. a - courtship
9. b - seasonal
10. b - migration
11. true
12. false
13. false
14. true
15. true
16. Animal behavior is defined as the actions living things perform in response to stimuli.
17. Instinctive behaviors are behaviors that living things are born with. Learned behaviors develop with experience and practice.
18. Examples of survival behaviors include squirrels climbing trees to gather nuts for food and deer running quickly to escape predators.
19. Courtship behavior is important because it enables animals to locate a mate and reproduce.
20. Migration is the movement of animals from one place to another in response to a change in the environment.

Post-Test (p. 16-17)

1. a - internal
2. a - courtship
3. c - camouflage
4. b - seasonal
5. c - adaptation
6. b - migration
7. c - instinctive
8. a - communicating
9. d - stimulus
10. b - brains
11. false
12. true
13. true
14. false
15. true
16. Examples of survival behaviors include squirrels climbing trees to gather nuts for food and deer running quickly to escape predators.
17. Migration is the movement of animals from one place to another in response to a change in the environment.
18. Instinctive behaviors are behaviors that living things are born with. Learned behaviors develop with experience and practice.
19. Animal behavior is defined as the actions living things perform in response to stimuli.
20. Courtship behavior is important because it enables animals to locate a mate and reproduce.

Video Review (p. 18)

1. The anole's movements are a warning for other animals to go away. This action is also used to attract a mate.
 2. Blinking when a ball is thrown at you is an instinctive behavior, whereas playing the piano is a learned behavior.
 3. The dog is warning someone to stay out of its territory.
 4. The geese are migrating south where it is easier for them to obtain food.
1. stimulus
 2. learned
 3. survival
 4. communication
 5. courtship

Vocabulary (p. 19)

1. behaviors
2. migration
3. instinctive
4. courtship
5. learned
6. adaptations
7. stimulus
8. survival
9. camouflage
10. seasonal behaviors

Answer Key to Student Activities

Writing Activity (p. 20)

Animal **behaviors** are actions living things take in response to stimuli. Most behaviors are **adaptations** that help animals survive and reproduce. Behaviors are often provoked by a signal or change in the environment, called a **stimulus**. The stimulus can be external, such as the presence of a predator, or **internal**, such as the feeling of hunger. Animals are born with many **instinctive** behaviors. **Learned** behaviors develop with experience. **Camouflage** is an example of a survival behavior that helps animals hide from predators. Birds sing to **communicate**, which is a type of social behavior. **Courtship** behaviors help animals select a mate. Some animals have special behaviors that help them adjust to the changing seasons. Monarch butterflies **migrate** from northern regions to Mexico every year.

In Your Own Words (p. 20)

1. Animals are born with instinctive behaviors, such as bees gathering nectar from flowers. Learned behaviors develop with experience and practice, like reading or playing the piano.
2. A stimulus is a signal or change in the environment or within an animal. An example of an external stimulus is the changing of the seasons. The feeling of hunger is an example of an internal stimulus.
3. Answers will vary. Students may observe pets eating, playing, or doing tricks, as well as wild animals, such as birds, singing or gathering food.

Types of Behavior (p. 21)

Below is an example of an answer for an elephant:

1. Elephants use their trunk to remove leaves and branches from trees and to place water in their mouths. They also use their trunks to ward off predators by waving them around. Elephants flap their ears to keep them cool.
2. The behaviors listed above are learned. Elephants are unusual because very few of their behaviors are instinctual. Most behaviors are learned by watching adults.
3. Stimuli include predators, hot temperatures, thirst, and hunger.
4. Elephants have been trained by humans.

The Adaptive Sandhill Crane (p. 23)

1. Sandhill cranes migrate south to north, flying between areas as far away as Mexico and Alaska. 80% of migrating sandhills rest for approximately one month on Nebraska's Platte River.
2. Sandhill cranes have had to change their diet from roots and invertebrates to corn and other grains.
3. Overcrowding increases competition for food, disease spreads more quickly, and a bad storm could kill many birds.
4. Although populations have increased since the 1940's, there are less than 200 whooping cranes in the wild in North America.
5. Scientists have started raising whooping cranes in captivity and releasing them into the wild.

What is That Behavior? (p. 24-25)

Part I:

1. instinctive; courtship
2. learned; social/survival
3. instinctive; seasonal
4. instinctive; social
5. instinctive; survival
6. learned; communication
7. instinctive; seasonal/survival
8. instinctive; courtship

Part II:

Example of answer for a mammal (dog):

| | | |
|---|---------------------------------|---------------|
| 1 | Dog barks | communication |
| 2 | Dog eats food | survival |
| 3 | Dog drinks water | survival |
| 4 | Dog rubs up against owners' leg | social |
| 5 | Dog plays with cat | social |

Pre-Test

Name _____

Circle the best answer for each of the following questions.

- Most animal behaviors are a type of:
a. *trait* b. *stimulus* c. *adaptation* d. *migration*
- When a dog barks, it is usually reacting to a:
a. *cat* b. *behavior* c. *migration* d. *stimulus*
- The feeling of hunger is an example of this kind of stimulus:
a. *internal* b. *seasonal* c. *external* d. *migratory*
- Spiders know how to spin webs without being taught. Spinning webs is an example of this type of behavior:
a. *acquired* b. *external* c. *instinctive* d. *seasonal*
- Mammals can acquire learned behaviors because they have well developed:
a. *fingers* b. *brains* c. *behavior* d. *camouflage*
- A lizard called the green anole blends in with leaves when it is still. This is an example of:
a. *migration* b. *stimulus* c. *camouflage* d. *communication*
- Even though they cannot talk, animals are capable of:
a. *communicating* b. *migrating* c. *camouflage* d. *courtship*
- This type of behavior helps animals locate and select a mate:
a. *courtship* b. *instinctive* c. *seasonal* d. *learned*
- A bear hibernating in the winter is an example of this type of behavior:
a. *learned* b. *seasonal* c. *courtship* d. *communication*
- Monarch butterflies fly from Canada to Mexico when the seasons change. This is an example of:
a. *camouflage* b. *migration* c. *courtship* d. *communication*

Pre-Test

Name _____

Write true or false next to each statement.

- 11. _____ Most animal behaviors are examples of adaptations.
- 12. _____ A frog's green color is an example of animal behavior.
- 13. _____ Acquired behaviors are not learned.
- 14. _____ Survival behaviors help animals stay alive.
- 15. _____ Geese migrating in the fall is an example of seasonal behavior.

Write a short answer for each of the following.

16. What is animal behavior?

17. Explain the difference between instinctive behaviors and learned behaviors.

18. List two examples of survival behaviors.

19. Why is courtship behavior important?

20. What is migration?

Post-Test

Name _____

Circle the best answer for each of the following questions.

- The feeling of hunger is an example of this kind of stimulus:
a. *internal* b. *seasonal* c. *external* d. *migratory*
- This type of behavior helps animals locate and select a mate:
a. *courtship* b. *instinctive* c. *seasonal* d. *learned*
- A lizard called the green anole blends in with leaves when it is still. This is an example of:
a. *migration* b. *stimulus* c. *camouflage* d. *communication*
- A bear hibernating in the winter is an example of this type of behavior:
a. *learned* b. *seasonal* c. *courtship* d. *communication*
- Most animal behaviors are a type of:
a. *trait* b. *stimulus* c. *adaptation* d. *migration*
- Monarch butterflies fly from Canada to Mexico when the seasons change. This is an example of:
a. *camouflage* b. *migration* c. *courtship* d. *communication*
- Spiders know how to spin webs without being taught. Spinning webs is an example of this type of behavior:
a. *acquired* b. *external* c. *instinctive* d. *seasonal*
- Even though they cannot talk, animals are capable of:
a. *communicating* b. *migrating* c. *camouflage* d. *courtship*
- When a dog barks, it is usually reacting to a:
a. *cat* b. *behavior* c. *migration* d. *stimulus*
- Mammals can acquire learned behaviors because they have well developed:
a. *fingers* b. *brains* c. *behavior* d. *camouflage*

Post-Test

Name _____

Write true or false next to each statement.

- 11. _____ Acquired behaviors are not learned.
- 12. _____ Geese migrating in the fall is an example of seasonal behavior.
- 13. _____ Most animal behaviors are examples of adaptations.
- 14. _____ A frog's green color is an example of an animal behavior.
- 15. _____ Survival behaviors help animals stay alive.

Write a short answer for each of the following.

- 16. List two examples of survival behaviors.

- 17. What is migration?

- 18. Explain the difference between instinctive behaviors and learned behaviors.

- 19. What is animal behavior?

- 20. Why is courtship behavior important?

Video Review

Name _____

While you watch the video, answer these questions:

You Decide!

1. What does this action mean?

You Compare!

2. What is the difference between these two actions?

You Decide!

3. What do you think this dog is communicating?

You Predict!

4. In what direction are they migrating?

After you watch the video, test your knowledge with these questions.

1. Most behaviors involve an animal reacting to a _____ .
2. _____ behaviors are developed with experience.
3. Seeking food is an example of _____ behavior.
4. Birds singing is an example of animal _____ .
5. _____ behaviors help animals locate, select, and bond with a mate.

Vocabulary

Name _____

Use these words to fill in the blanks next to the sentences below.

Words

stimulus instinctive seasonal behaviors courtship camouflage
learned behaviors survival adaptations migration

1. _____ The actions living things perform in response to stimuli.
2. _____ The seasonal movement of animals from one place to another in an effort to improve chances of survival.
3. _____ Living things are born with this type of behavior.
4. _____ Behaviors that allow animals to locate, select, and bond with a mate.
5. _____ Behaviors that change over time as a result of experience.
6. _____ Characteristics that help living things survive and reproduce.
7. _____ A signal or change in the environment or within a living thing.
8. _____ Behaviors that help animals stay alive. For example, those behaviors that enable animals to find food.
9. _____ Blending in with the background in order to hide from predators.
10. _____ Actions that respond to or coincide with seasonal changes.

Writing Activity

Name _____

| | | | | | |
|-------|-------------|-------------|-----------|----------|-------------|
| Words | courtship | communicate | behaviors | stimulus | migrate |
| | adaptations | camouflage | internal | learned | instinctive |

Use the correct word from above to complete the sentences in the following paragraph.

Animal _____ are the actions living things take in response to stimuli. Most behaviors are _____ that help animals survive and reproduce. Behaviors are often provoked by a signal or change in the environment, called a _____. The stimulus can be external, such as the presence of a predator, or _____, such as the feeling of hunger. Animals are born with many _____ behaviors. _____ behaviors develop with experience. _____ is an example of a survival behavior that helps animals hide from predators. Birds sing to _____, which is a type of social behavior. _____ behaviors help animals select a mate. Some animals have special behaviors that help them adjust to the changing seasons. Monarch butterflies _____ from northern regions to Mexico every year.

In Your Own Words

1. Explain the difference between instinctive and learned behaviors. Give examples.

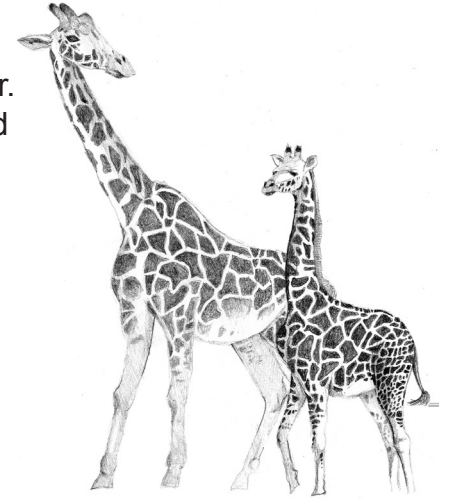
2. Define stimulus and give an example of external and internal stimuli.

3. Give two examples of animal behavior you have observed in your neighborhood.

Types of Behavior

Name _____

Background: Animals carry out many different types of behavior. Most behaviors have a purpose. The purpose may be to find food or communicate with other animals. Animals perform behaviors in response to stimuli. A **stimulus** is a change or signal in the environment. For example, the stimulus of sighting a predator would cause an animal to run away. Many behaviors animals perform are **instinctive**. Living things are born knowing how to carry out instinctive behaviors. Other behaviors are **learned**. Learned behaviors are the result of experience and practice. In fact, you are using a learned behavior right now! Reading is a behavior that human beings learn.



Animals also develop learned behaviors. People can train animals to develop specific learned behaviors. Animals are trained using a stimulus. The stimulus can be a positive reward for good behavior. For example, petting a dog or feeding it a treat are examples of positive rewards that act as stimuli. Negative stimuli are sometimes used as a punishment for bad behavior. By responding to positive and negative stimuli, animals can learn new behaviors. Dogs, for example, can learn tricks, such as rolling over or jumping in the air. Dogs can also learn to help people with disabilities. Guide dogs help people who are blind move around safely. In this activity, you will explore both learned and instinctive behaviors of several fascinating animals.

Activity:

1. In small groups (2-4 students), pick one of the animals listed below. Each group should choose a different animal.
2. With your group, research the animal you have chosen. Use several resources, such as encyclopedias, the internet, and other books. Pay particular attention to information about the animal's habitat, diet, and behavior.
3. Create a drawing or image of your animal.
4. Use the information you gather to answer the questions below.
5. In groups, present the information and image of your animal to the class.

| | | | |
|-----------------|--------------------|------------|------------------|
| Animals: | Bottlenose dolphin | Orangutan | Camel |
| | Otter | Raccoon | Giraffe |
| | Elephant | Orca whale | Peregrine falcon |

Questions:

1. Make a list of different behaviors your animal carries out. They might include ways the animal finds food, avoids predators, locates a mate, and finds shelter.
2. Distinguish between behaviors that are instinctive and behaviors that are learned. Be sure to find at least one of each type.
3. What kinds of stimuli are present in your animal's environment?
4. Has the animal ever been trained by humans?

The Adaptive Sandhill Crane

Name _____

Directions: Read the information below and answer the questions on the following page.

Cranes are among the most beautiful and graceful birds on the planet. There are 15 known species of cranes in the world. The sandhill crane has the largest population of all the crane species. Sandhill cranes are gray in color with a long neck, long legs, and a distinctive red patch on their heads. They mate for life and can live up to 25 years in the wild.



One important characteristic of sandhill cranes is that most migrate, although there are a few groups that do not. Some migrate between places as far away as Mexico and Alaska. These birds follow migratory paths along river systems that have been followed by their ancestors for thousands, perhaps millions, of years. Eighty percent of the sandhill crane population in North America spends approximately one month in the spring along Nebraska's Platte River, en route to breeding grounds in Canada and Alaska. From late February to mid-April, approximately 500,000 birds "move in" to a 75-mile long stretch of land, where they rest and prepare for their long journey north.

When sandhill cranes began traveling to the Platte River, the area was filled with wetlands and other vegetation-rich habitats. Sandhills ate roots, seeds, insects, and invertebrates. However, the area changed drastically as human settlement increased. Most of the wetlands along the river were replaced with farmland. Fortunately, sandhill cranes have been able to adapt to this new habitat and now feed off corn and other grain readily available in the area.

In addition to their food source changing, the area that sandhills roost in has become much smaller. The 200-mile strip of land they used to rest in has been reduced to 75 miles. The area has become crowded. There are less than 20 roost sites, and every night 10,000 to 15,000 birds rest at each site. Overcrowding increases competition for food, disease spreads more quickly, and a bad storm could kill many birds. For this reason, it has become increasingly important to protect the natural habitat of these birds.

Whooping cranes are another migratory bird in North America. Unlike the sandhill crane, the whooping crane is endangered. Scientists estimate there are less than 200 whooping cranes living in the wild in North America today. In the 1940s, there were only 14 whooping cranes in this area. Because of their similarities, scientists have turned to sandhill cranes to help the whooping crane population.

The Adaptive Sandhill Crane

Name _____

In 1993, Scientists in Canada and the United States set out to create a non-migratory flock of whooping cranes, which would be raised in captivity and then released into the wild. Whooping cranes lay two eggs, but usually only one survives. The scientists' plan was to collect the second egg and raise it in captivity. They decided to first try this with sandhill cranes.

One thing scientists learned by working with sandhill cranes in captivity is that the cranes weren't afraid of humans. This could be dangerous once the cranes were released into the wild. So scientists began disguising themselves as cranes. They made hand puppets that looked like cranes and used these to teach the sandhill cranes to eat. They also dressed in gray cloth, the color of sandhill cranes, and wore a hidden tape recorder that played noises made by sandhill cranes. Dressed in these costumes, they taught the birds how to look for food and survive in the wild. These cranes were later released into the wild. Most survived and behaved like cranes that had been raised in the wild.

After successfully establishing a non-migratory flock of whooping cranes, scientists set out in 1999 to establish a population of whooping cranes that would migrate. Their plan was to use lightweight planes to teach whooping cranes to migrate. They first tried this method with Canada geese, a non-extinct migratory bird, and it worked! Once they knew birds would follow a plane, they used sandhill cranes to find a safe migratory route for the whooping cranes to follow. To teach the sandhill cranes raised in captivity to follow a plane, scientists began playing recorded engine sounds to the eggs while they were incubating. When the eggs hatched, one of the first things the tiny birds saw was a puppet that looked like an adult sandhill crane. As the birds started to develop flight feathers, they followed their handler and the lightweight plane up and down the runway. Once they were old enough to fly, they began short flights in the area every day, building their strength for the long flight north. Eventually, the sandhill cranes made the full journey from Florida to Wisconsin and continued to follow the route in the following years. After having so much success with sandhill cranes, the scientists began using this technique with whooping cranes. By 1999, 5 years after the program was started, 60 whooping cranes had been taught to fly a specific route between Florida and Wisconsin. The whooping crane population in North America is continuing to grow, largely thanks to the work done with sandhill cranes.

Questions:

1. Describe the migration pattern of sandhill cranes.
2. How have sandhill cranes adapted to changes along Nebraska's Platte River?
3. What is the danger of the Platte River Valley becoming too overcrowded?
4. Why are scientists worried about whooping cranes?
5. How have scientists helped the whooping crane population?

What is That Behavior?

Name _____

Background: Animals have developed different kinds of behavior that enable them to survive in the environment in which they live. Animal behaviors can be classified as instinctive or learned. An **instinctive behavior** is a behavior an animal is born with. A **learned behavior** is a behavior that develops with experience and practice.

Whether instinctive or learned, animals behave certain ways for specific reasons. These reasons can be divided into different categories of behavior. Some of the main categories are listed below:

Survival behavior - Behavior that helps an animal to survive, such as finding food or avoiding predators.

Communication/social behavior - Behavior that involves interacting with other animals.

Courtship behavior - Behavior that enables an animal to locate a mate and reproduce.

Seasonal behavior - Behavior that helps animals adjust to the changing seasons.

Part I: In this activity, you will categorize animal behaviors. Study the list of different types of behavior above. Next, read the descriptions of animal behaviors listed in the chart. Decide whether each behavior is instinctive or learned. Then decide what other category of behavior each description fits into.

| Behavior | Instinctive/Learned | Other |
|---|---------------------|-----------------|
| <i>Example:</i> Canada geese fly south in the fall, where it is easier to find food. | <i>Instinctive</i> | <i>Seasonal</i> |
| 1. A male peacock displays his beautiful tail to a female. | | |
| 2. A bottlenose dolphin breaches, or jumps, in the air. People clap and the trainer feeds the dolphin a fish. | | |
| 3. A hedgehog climbs into its den and hibernates through the winter. | | |
| 4. Two monkeys take turns grooming one another. One picks bugs from the other's fur and eats them. | | |
| 5. A sea anemone paralyzes prey with its tentacles. | | |
| 6. A human toddler practices saying "please" and "thank you." | | |
| 7. Squirrels gather as many nuts as possible and bury them to prepare for the winter. | | |
| 8. A male sea horse dances and changes colors to impress a female. | | |

What is That Behavior?

Name _____

Part II:

1. Find an example of the living things listed below. Observe their behavior for 5 minutes.
2. Every minute, describe the behavior of the living things in the charts below.
3. At the end of 5 minutes, identify the type of behavior carried out by the living thing.

Mammal

| Minute | Description of Behavior | Type of Behavior |
|--------|-------------------------|------------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |

Bird

| Minute | Description of Behavior | Type of Behavior |
|--------|-------------------------|------------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |

Insect

| Minute | Description of Behavior | Type of Behavior |
|--------|-------------------------|------------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |