



# To Be or Not to Be: That Is the Challenge

*Pam Foster, WVPT*

## Overview

**Topic:** Animal adaptations, physical and behavior adaptations. Students will use video and online digital books to learn ways animals use their physical structure or how they change their behavior to adapt to the habitat and environment in which they live. They will research an animal using teacher-selected websites and create a brochure on the physical and behavior adaptations of an animal.

## Time Allotment

Five 60-minute class periods

## Learning Objectives

On completion of this lesson students will be able to:

- Identify 2 categories of adaptations made by animals: physical and behavioral.
- Categorize adaptations by animals as physical or behavioral.
- Explain how these adaptations make a difference in the animal's survival.
- Predict what would happen if the animal fails to adapt.

(This lesson addresses Va. SOL Science 2.7)

## Media Components

- Video: ***Animal Adaptations***. 100% Educational Videos. (2003). Retrieved February 27, 2010, from Discovery Education: <http://www.wvpt.unitedstreaming.com/>  
Segment Used:  
Segment 3: Physical and Behavioral Adaptations [01:29]
- Projector
- Interactive Whiteboard

- Computer or Laptop with Internet access (teacher)
- Computers with Internet access — 1 per group of 2 students
- Student response system, such as Quizmo — 1 clicker per student
- Software:
  - Kidspiration
  - Microsoft Office, or other desktop publishing program
- Kidspiration File: Animal Adaptations available to download from wvpt4learning.org website  
Kidspiration Version 2: <http://www.wvpt4learning.org/lessons/pdf10/tobechallenge2.kid>  
Kidspiration version 3: <http://www.wvpt4learning.org/lessons/pdf10/tobechallenge3.kid>
- Word File: Brochure Template (sample attached) available to download from [http://www.wvpt4learning.org/lessons/pdf10/tobechallenge\\_template.doc](http://www.wvpt4learning.org/lessons/pdf10/tobechallenge_template.doc)
- Websites:
  - Animal Diversity: Where Can Animals Live? <http://www.sciencenetlinks.com/Esheet.php?DocID=103> — This is an online book with pictures of different animals
  - A Home for Pearl <http://www.tumblebooks.com> — This is a subscription website with books for students to read. (Free 30-day trial is available.)



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### Websites for Research:

- o Monarch Butterfly  
<http://www.monarch-butterfly.com/>
- o The Journey North  
<http://www.learner.org/jnorth/monarch/>
- o Monarch March  
<http://www.monarchwatch.org/>
- o Monarch Butterfly USA  
<http://www.monarchbutterflyusa.com/>
- o The Chipmunk Place  
<http://www.chipmunkplace.org/>
- o Chipmunk  
<http://animals.nationalgeographic.com/animals/mammals/chipmunk.html>
- o Chipmunk Information  
<http://www.chipmunklearningzone.com/>
- o Frog Facts  
<http://www.frogsvilleusa.com/facts/index.html>
- o Weird Frog Facts  
<http://allaboutfrogs.org/weird/weird.html>
- o Amphibian Care  
[www.amphibiancare.com/frogs/caresheets.html](http://www.amphibiancare.com/frogs/caresheets.html)
- o Chameleons Online  
<http://www.chameleononline.com/>
- o Chameleons  
<http://magma.nationalgeographic.com/ngexplorer/0210/articles/mainarticle.html>
- o San Diego Zoo: Chameleons  
<http://www.sandiegozoo.org/animalbytes/t-chameleon.html>
- o Milk Snake  
[http://www.umass.edu/nrec/snake\\_pit/pages/milk.html](http://www.umass.edu/nrec/snake_pit/pages/milk.html)
- o Milk Snakes  
[http://herpcenter.ipfw.edu/index.htm?  
http://herpcenter.ipfw.edu/outreach/accounts/reptiles/snakes/Milk\\_snake/index.htm&2](http://herpcenter.ipfw.edu/index.htm?http://herpcenter.ipfw.edu/outreach/accounts/reptiles/snakes/Milk_snake/index.htm&2)

### Materials and Student Handouts

- A variety of clothing and items representing the different seasons
- Animal Adaptations Graphic Organizer — 1 per student (attached)
- Animal Adaptations Rubric — 1 per student (attached)

### Teacher Preparations

- Collect a variety of clothing and objects that represent what people wear or do for each of the four seasons and put randomly place items on a table, box, or area of the room so that they are not readily identified with a season for the introductory activity.
- Copy handouts.
- Download and preview video clip.
- Sign up for a free trial to Tumblebooks.
- Preview and bookmark websites or add to teacher PortaPortal. Make sure they are not filtered.
- Download Kidspiration sort.
- Download brochure template or create a new one with an available desktop publishing program and save to a network location.
- Prepare student response system to have students select from two choices — physical adaptation and behavior adaptation.

### Introductory Activity

**1. Focus:** Say: People have to be able to survive in their environment. What do people do when the weather gets really cold? (Allow students to respond.) What about when it gets hot? (Allow students to respond.)

**Activity:** Divide the class into four groups and assign each group a different season. Direct the attention of each group to various clothes and objects that represent the different seasons. Each group must select and dress in clothing that represents their season.

**Follow-up:** Have each group come to the front of the room and explain why they chose each item. How does it help them in the season they chose? People make changes in clothes and activities during the seasons. Introduce the terms adapt and adaptation. Discuss the meaning of these terms and relate to the changes that people make.

### Learning Activities

**1. Focus:** We saw how people change in response to their environment. What is that change called? (adaptation) Ask: Do animals make adaptations too?

(Allow students discussion.) Say: Today, we are going to talk about animals. Discuss the following questions as a group: How do you think animals adapt? In what ways do they need to change? How does what they look like or how their bodies are made help an animal? How does the way they do things or how they act help an animal? Say: We are going to watch a video clip that will tell us two kinds of adaptations that animals have to survive. At the end of this clip, I want you to be ready to tell me the two kinds of adaptations that animals have in order to survive.

**Play:** *Animal Adaptations: Physical and Behavior Adaptation* video from the beginning.

**Pause:** at the end of the clip.

**Follow-up:** Ask: What are the two kinds of adaptations animals have? (physical and behavioral) What is a physical adaptation? (change in structure) What is a behavior adaptation? (a change in the way an animal acts)

#### Videostreaming

In order to use videostreaming interactively with students, teachers should use pre-segmented clips provided by the videostreaming company. If you wish to conduct a discussion before the clip is over and then resume after the discussion, use PAUSE, as this will cause the media player to remain at the current location in the stream. If the remainder of the video clip will not be used and the teacher wants to return to the beginning of the video clip, then use STOP so that the media player will revert to the beginning of the stream.

**2. Focus:** We are going to watch the video again. This time we are looking for an example of physical adaptation.

**Replay** the video from the beginning.

**Pause:** at 00:33 when you see a close-up of a giraffe and hear “leaves at the tops of trees.”

**Follow-up:** What physical adaptation did you see? (giraffe’s long neck) How does this adaptation help the giraffe? (to reach the leaves on the trees)

**3. Focus:** Now, look for an example of a behavior adaptation.

**Resume:** the video.

**Stop:** at 1:21 when you see the children eating and the guide says “something you are all familiar with, I see.”

**Follow-up:** What behavior adaptation did you see? (salmon return to where they are born) How do they know to do this? (instinct) What is an instinct? (something you are born knowing how to do)

**4. Focus:** Say: Let’s look at some animals. As we look at each one, I want you to consider: How do the adaptations help the animal to survive?

**Activity:** Open the book [Where Can Animals Live?](#) from

[www.sciencenetlinks.com/Esheet.php?DocID=103](http://www.sciencenetlinks.com/Esheet.php?DocID=103).

Discuss the answers to the questions and then have students use the clickers to identify whether each adaptation is physical or behavioral. Have students explain how each adaptation helps the animal to survive.

**Follow-up:** Ask: What are the two kinds of adaptations animals make to survive? (physical and behavior) What would happen if the animal did not adapt? (Allow student discussion.)

**5. Focus:** Let’s make sure you have a good understanding of physical and behavior adaptations. You are going to have the opportunity to decide whether different adaptations are physical or behavioral.

**Activity:** Using the Kidspiration file and the interactive whiteboard, call on students to come up to the board to drag the adaptations to the correct box. Ask the other students to give an example for each type of adaptation.

**Follow-up:** Review the sort and discuss how the adaptations help the animals to survive. Select several and have the students predict what would happen if the animal did not have that adaptation.

**6. Focus:** We are going to read a book that makes the point that each animal has its own needs. As you listen to the book, think about what kind of home (habitat) is appropriate for that animal. Watch how Pearl’s friends react to her new home.

**Activity:** Go to [www.tumblebooks.com](http://www.tumblebooks.com) and open the book [A Home for Pearl Squirrel](#) As you read through the book, discuss why each animal did not like Pearl’s new home.

**Follow-up:** Ask: How did Pearl’s friends react to her new home. (they did not like it) Why? (each

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animal needs different things and Pearl's home did not have the things they need) What did Raven mean when he told Pearl that each animal's home is appropriate for that animal and not the other animals? (each animal has its own set of needs and that the animal must be able to adapt to their environment in order for their needs to be met.) Would Pearl have been comfortable in the other animals' homes? (probably not) If changes occurred to Pearl's home or to any of her friends' home, what would Pearl and her friends need to do in order to survive? (adapt)

### Culminating Activities

**1. Focus:** Say: We are going to research an animal to find out more about its adaptations. You will partner up and try to find out as much as you can about your animal. Have each pair select an animal to research.

**Note to the teacher:** I used animals that were from each kind of adaptation we discussed: Monarch Butterfly (migration); frogs (hibernation and estivation); chipmunks (hibernation); chameleon (camouflage); milk snake (mimicry).

**Activity:** Take students to the computer lab so they can use the websites to read about their animal. Hand out the graphic organizer and the rubric for the project and go over the information that the student needs to find and the project requirements. Circulate to help students locate information and complete the graphic organizer.

**Follow-up:** Provide time for the students to share something they have learned with another group. As a whole group, ask: Who has an interesting fact that they would like to share? Allow time for each group to share an interesting fact about their animal.

**2. Focus:** Say: Now you are going to continue working with your partner to prepare a brochure so other students can learn more about your animal.

**Activity:** Review the requirements for the project. Help students open the brochure template and then provide time for them to complete the brochure.

**Follow-up:** Allow students to display their brochure and present their findings to the class. Share the brochures with other second grade classes.

### Assessment

Observation of student participation throughout the lesson and the Kidspiration sort (done individually or as a whole group) can be used to assess student understanding of the types of animal adaptations. The students will self-assess by filling in the rubric as they complete the project. The teacher will use the rubric for the final grade.

### Community Connections

- Have speakers from the Conservation Center in Front Royal, Virginia come to the class to talk to the students about animals and how important it is for them to adapt to their habitat/environment.
- Have a veterinarian talk to the students about taking care of animals.
- Speakers from the Humane Society could come to talk about the needs of domestic animals and the care they need in order to make sure their habitat meets their needs.

### Cross-Curricular Extensions

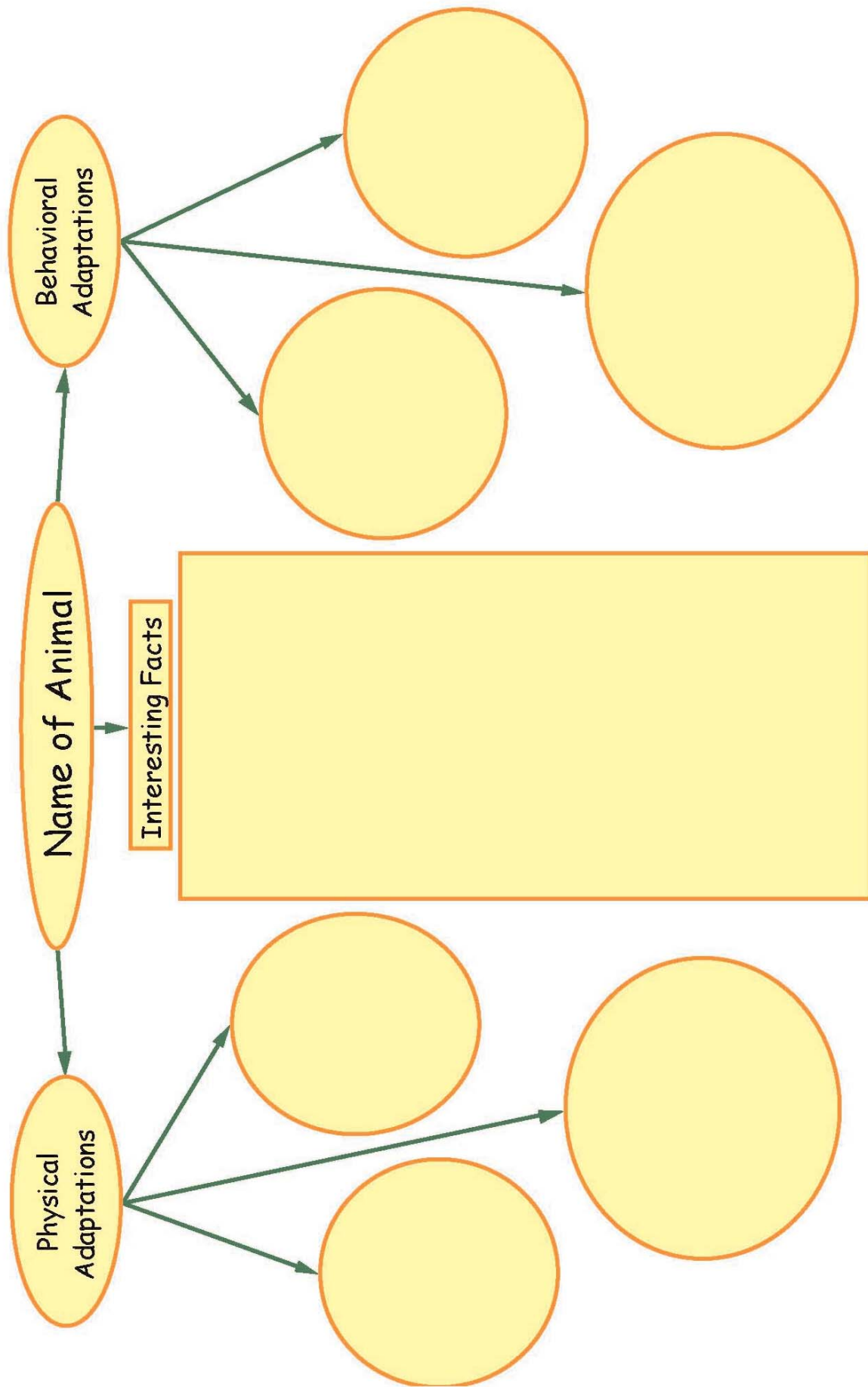
- **Language Arts:** Students can read other books and use additional websites to practice gathering information and organizing what they have learned in order to write a report.
- **Math:** Students can graph the results of the students voting with the personal response system.
- **Social Studies:** Review the history of the National Zoo by visiting the website: <http://national-zoo.si.edu/> (as well as providing trade books for students to review and read) and let students gather information on what is done to try to give the animals what they need so they adapt to this man-made environment. Discuss the differences in what the animal's natural environment provides versus what the man-made environment provides.
- **Science:** Use the website [www.switcharoozoo.com](http://www.switcharoozoo.com) to create an animal or to "visit" a habitat and make decisions that help the animal survive their habitat.
- **Art/Technology:** Use a program like Paint to create a habitat for the animals that the students researched.

### About the Author

#### **Pam Foster**

Pam Foster lives in Front Royal, Virginia, with her dog, Scooby. She has taught for 24 years, with 23 years in the Warren County Public Schools. She has taught kindergarten, second grade, and third grade. She is currently teaching second grade at Hilda J. Barbour Elementary School. She loves to read, go to movies, and spend time with the children she is blessed to have in her classroom. She does not have children of her own, but she considers every child who comes into her life one of Foster's Fab Folks. She has attended several NTTI Conferences and embraces any technology she can get her hands on to enhance the classroom experience for her students.

June 2010



**RubiStar** Rubric Made Using:  
RubiStar ( <http://rubistar.4teachers.org> )

## Research Report : Animal Adaptations Brochure

Teacher Name: **Ms. foster**

Student Name: \_\_\_\_\_

CATEGORY	4	3	2	1
<b>Mechanics</b>	Almost no grammatical, spelling or punctuation errors. Complete sentences used, and information given stays on topic.	A few grammatical, spelling or punctuation errors. Mostly complete sentences used, and information given mostly stays on topic.	Many grammatical, spelling, or punctuation errors. A few sentences are on topic, and several bits of information are off topic.	Mostly grammatical, spelling, or punctuation errors. Sentences not complete; information off topic.
<b>Graphic Organizer</b>	Graphic organizer or outline has been completed and shows clear, logical relationships between all topics and subtopics.	Graphic organizer or outline has been completed and shows clear, logical relationships between most topics and subtopics.	Graphic organizer or outline has been started and includes some topics and subtopics.	Graphic organizer or outline has not been attempted.
<b>Quality of Information</b>	Information clearly relates to the main topic. It includes at least 3 supporting details and/or examples.	Information clearly relates to the main topic. It provides 1-2 supporting details and/or examples.	Information clearly relates to the main topic. No details and/or examples are given.	Information has little or nothing to do with the main topic.
<b>Internet Use</b>	Successfully uses suggested internet links to find information.	Usually able to use suggested internet links to find information.	Occasionally able to use suggested internet links to find information.	Has difficulty using suggested internet links to find information.

Date Created: **Mar 21, 2010 05:52 pm (UTC)**

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