



WHY DOES IT LOOK LIKE THAT?

Subject Matter: Science

Grade Levels: 4-6, but may be adapted to other grade levels

Time Allotment: Two 45-minute class sessions

Master Teacher: Christine Barr

Overview

Why do animals look a certain way? How do the features of an animal help it survive? Through activities presented in this lesson, students will gain an understanding of adaptation, why animals look the way they do and how adaptation helps animals to survive.

Learning Objectives

Students will be able to:

- Define the term “adaptation.”
- Complete a field study of an animal.
- Describe how adaptations help an organism survive in its environment.

Oregon Standards Available at:

<http://www.ode.state.or.us/cifs>

Science - Diversity/Interdependence

- Describe how adaptations help species survive.

Media Components

Video

Check the link at <http://www.opb.org/edmedia/trs/> to find access to the video(s) from unitedstreaming™ referenced in this lesson plan.

- “Animals Around Us: Animal Adaptations: What Are They?” (14:00)
 - **Clip:** “Adaptations: Features that Help Animals Survive” (02:26)
 - **Clip:** “Examples of Animal Adaptations” (04:38)

- “American Deserts: Life in the Desert” (10:00)
 - **Clip:** “Animal Adaptations to Desert Conditions” (02:24)
- “Junior Oceanographer: The Life in the Sea” (17:06)
 - **Clip:** “What are Some Special Ocean Adaptations?” (04:50)

Web

- **American Field Guide: Animal Index**

This site contains an index of animal video clips, including amphibians, birds, fish, insects, mammals and reptiles. Students can use these video clips to complete field observations of animals to which they may not normally have access.
<http://www.pbs.org/americanfieldguide/topics/animals/index.html>
- **NOVA Online: Leopards of the Night: Seeing Through Camouflage**

This is an interactive site that offers a camouflage category matching game. The game has a grid with four categories of camouflage (concealing coloration, disruptive coloration, disguise and mimicry). As students drag a photo of an animal to its correct camouflage category, a description of how the animal uses that type of camouflage is given.
<http://www.pbs.org/wgbh/nova/leopards/seeinggame.html>
- **Family Education Network: Animal Adaptations E-Safaris**

This is an interactive site that offers features of animal adaptations in clue format; students then try to guess which animal is described. They then click on a link that displays a picture of the animal. As of March 1, 2003, animals #1, 4 and 5 have links that function correctly.
<http://www.fen.com/studentactivities/CCCNet/sciencelab/Animals/AnimalAdapts.html>

Materials

For Introductory Activity:

- Scissors, cups and other tools you want students to try to use without their thumbs

For Each Student:

- An Animal Adaptation Field Observation Sheet (located at end of lesson plan)
- Notebook paper
- Pencil or pen

Prep for Teachers

Prior to teaching this lesson, bookmark all of the Web sites used in the lesson on each computer in your classroom.

Make enough copies of the Animal Adaptation Field Observation Sheet for each student in the class.

Download the video clips onto the computer you will use to project the clips for the classroom presentation. Be certain each computer in the classroom has a copy of the free Windows Media Player installed (some clips aren't available for use with QuickTime Player).

When using media, provide students with a **Focus for Media Interaction**, a specific task to complete and/or information to identify during or after viewing of video segments, Web sites or other multimedia elements.

Introductory Activity

Step 1: Ask students to study their own hands. Ask them what features of their hands help them in everyday living. (Students should mention fingers and thumb.) Explain to the students that humans have an opposable thumb, and such thumbs are an adaptation that helps humans with survival skills.

Step 2: Ask students to try to perform tasks without using their thumbs. (Tasks may include writing, opening the door and window, using scissors, drinking from a cup and tying shoes. You may wish to divide the class, and have half try the tasks with one hand and the other half with both hands.) Have students tell which tasks were difficult to complete and explain how they managed to complete these tasks without their thumbs. (Student answers will vary; some tasks they can complete with fingers only and others they may not have been able to complete at all.)

Step 3: Tell students that, as was mentioned earlier, the opposable thumb is an adaptation that helps humans complete tasks. Ask students if they can define the term "adaptation." (Answers will vary. If your students cannot define the term, explain to the students that adaptations are the special characteristics or features that help living things survive in the area in which they live.)

Step 4: Explain to the students that in this lesson they will be examining animal adaptations. They will explore why animals look the way they do.

Learning Activities

Step 1: Explain to the students that they will be examining the concept of animal adaptations by watching video clips. Provide students with a **Focus for Media Interaction**, asking them to watch for the definition of adaptation and what adaptation features are mentioned for the turtle. **Play** the video clip, "Adaptation Features that Help Animals Survive" (02:26), from the video, "Animals Around Us: Animal Adaptations: What Are They?" (14:00)

Step 2: Ask students to recall the definition for adaptation. (Students should say adaptations are the special features that help animals survive.) Ask students for some examples of how the turtle in the video had adapted. (Students should mention that the turtle has paddle feet to help move through the water, and the turtle's eyes and nostrils are on the top of its head to help it breathe and see with only a small part of its body out of the water.)

Step 3: Tell students they are going to watch another video clip. Provide students with a **Focus for Media Interaction**, asking them to take note of physical adaptations (how animals look) and behavioral adaptations (how animals act). **Play** the video clip, "Examples of Animal Adaptations" (04:38), from the video, "Animals Around Us: Animal Adaptations: What Are They?" (14:00)

Step 4: Ask students for the examples of physical adaptations from the video clip. (Students will mention camouflage, blending and teeth.) Have students tell how these adaptations help animals. (Answers will vary, but students should mention that the color helps animals hide from predators and the teeth help animals get the food they need.)

Step 5: Ask students for examples of how behavior is influenced by adaptation. (Students will mention that some animals stay together in large groups, herds, to keep safe.)

Step 6: Tell students they are going to watch another video of animal adaptations in the desert. Ask students to predict what adaptations they think desert animals might need. (Answers will vary, but should include information about staying cool, and getting food and water.) Provide students with a **Focus for Media Interaction**, asking them to watch for special features of desert animals that help them survive. **Play** the video clip, "Animal Adaptations to Desert Conditions" (02:24), from the video, "American Deserts: Life in the Desert" (10:00).

Step 7: Ask students to tell what special features desert animals have that help them adapt to their surroundings. (Students will point out the activity level, activity times, mobility and homes of the animals.)

Step 8: Tell students they are going to watch one more video clip that shows how animals adapt to ocean life. Ask students to predict what features ocean creatures need to survive. (Answers will vary, but should include information about breathing, color/camouflage and behavior.) Provide students with a **Focus for Media Interaction**, asking them to watch for adaptation features of ocean creatures. **Play** the video clip, "What are Some Special Ocean Adaptations?" (04:50), from the video, "Junior Oceanographer: The Life of the Sea" (17:06).

Step 9: Ask students to tell some of the adaptation features ocean animals have. (Answers will vary, but should include body shape, color/camouflage and body functions.)

Culminating Activity

Step 1: Review with the students some main adaptation features of animals and make a list of these features on the overhead or chalkboard. (The list should include color/camouflage, body shape and body functions.)

Step 2: Have students log on to the NOVA Online Web site at <http://www.pbs.org/wgbh/nova/leopards/seeinggame.html>.

As a **Focus for Media Interaction**, ask students to complete the activity of matching the animal pictures to their correct categories of camouflage. Tell students to think about how each form of camouflage helps the animals to adapt and survive in their environments. Challenge students to time themselves and see how quickly they can put the animals in the correct camouflage categories.

Step 3: Tell students that they will have the opportunity to complete a field observation of an animal, noting special features of that animal. Hand out the Animal Adaptation Field Observation Sheet to each student.

Step 4: Have students log on to the American Field Guide: Animal Index Web site at <http://www.pbs.org/americanfieldguide/topics/animals/index.html>. Tell students that they can choose one of the following links for their field study:

- Mammals - Oregon mountain lions
- Reptiles - rattlesnake
- Birds - peregrine falcon

As a **Focus for Media Interaction**, explain to the students that they need to watch the clip of their animal and fill out as much information about the animal's adaptations as possible. Allow students time to complete the field study.

Step 5: As an assessment, have students write a paragraph summary of their field study. Their summary should include both physical and behavioral characteristics of their animal's adaptations and an explanation of how the adaptations helped this animal.

Cross-Curricular Extensions

Writing/Language Arts

- Have students visit Family Education Network: Animal Adaptations E-Safaris Web site at <http://www.fen.com/studentactivities/CCCNet/sciencelab/Animals/AnimalAdapts.html> and view the clues for animals #1, 4 and 5. Then have students write animal riddles that give clues to the animal based on adaptation features.

Art/Language Arts

- Have students create a new animal using ink pens or paint. Then have students write an essay describing where this animal lives and what special features help it to adapt to its environment.

Community Connections

- Have students complete a field observation of an animal they can see at home. They may choose domestic pets, insects, birds, etc.
- Invite a speaker from the local zoo or aquarium to come talk to the class about how enclosures are designed to meet the needs of the species' adaptations.

Animal Adaptation Field Observation

Animal Observed: _____

Date: _____ **Time:** _____

Location: _____

Weather Conditions: _____

Adaptations You Observed (include information on color, body shape, body functions and animal activity):

How the Adaptations Help This Animal: