

4: It's a Bear Out There!

Based on the Alaska quarter reverse



OBJECTIVE

Students will examine and understand common characteristics of ecosystems. Students will research characteristics, behaviors, and adaptations of the brown bear.



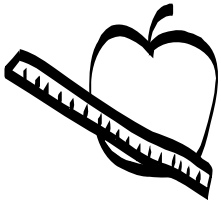
MATERIALS

- 1 overhead projector
- 1 overhead transparency of each of the following:
 - “Alaska Quarter Reverse” page
 - “Name that Ecosystem!” page
 - “Animal ABC” worksheet
- “Animal ABC” worksheet
- 1 class map of the United States
- 1 copy of a text that gives information about tundra ecosystems. For example:
 - *Life in the Tundra (Ecosystems in Action)* by Cherie Winner
 - *Arctic Tundra* by Donald M. Silver
 - *The Arctic Tundra* by Michael H. Forman
 - *Frozen Tundra: A Web of Life* by Philip Johansson
 - *Arctic Tundra: Land With No Trees (Rookie Read-About Science)* by Allan Fowler
- Computers with Internet access
- Chart paper
- Markers
- Pictures showing various ecosystems
- Pencils and paper
- White construction paper (11x14)
- Markers
- Colored pencils



PREPARATIONS

- Make an overhead transparency (or photocopy) of each of the following:
 - “Alaska Quarter Reverse” page
 - “Name That Ecosystem!” page
 - “Animal ABC” worksheet



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- Make copies of “Animal ABC” worksheet (1 per student and 1 per pair of students)
- Locate a text that gives information about the tundra ecosystems (see examples under “Materials”).
- Gather pictures showing various ecosystems for sessions 1 and 2.
- Reserve the computer lab for two sessions.
- Bookmark Internet sites that contain information about the brown bear, including its behaviors and adaptations.
- Gather various texts about the ecosystem and animals in your location to use in sessions 4 and 5.



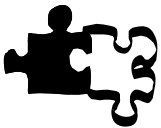
GROUPINGS

- Whole group
- Small groups
- Pairs
- Individual work



CLASS TIME

Four 30- to 45-minute sessions



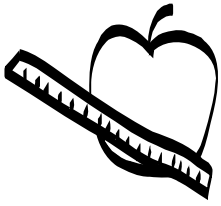
CONNECTIONS

- Science
- Language Arts



TERMS AND CONCEPTS

- Quarter
- Obverse (front)
- Reverse (back)
- Characteristic
- Behavior
- Adaptation
- Tundra



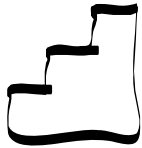
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BACKGROUND KNOWLEDGE

Students should have a basic knowledge of:

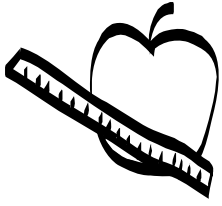
- Ecosystem
- Compare and contrast
- Similarities and differences



STEPS

Sessions 1 and 2

1. Describe the 50 State Quarters® Program for background information, if necessary, using the example of your own state, if available. Then display the transparency or photocopy of the “Alaska Quarter Reverse” page. Locate Alaska on a classroom map. Note its position in relation to your school’s location.
2. Ask the students to examine the Alaska quarter and tell you what they know about the picture. Explain to the students that the image features a brown bear clutching a salmon in its jaws. Explain to the students that they will be learning about ecosystems. Ask the students for the definition of the term “ecosystem.” The definition should reflect that an ecosystem describes the interaction between living and nonliving parts of an environment. Write the definition and briefly discuss examples of living and nonliving parts of an ecosystem on a piece of chart paper. Guide the students to understand that the living parts of an ecosystem depend on the nonliving.
3. Remind the students that there are many kinds of ecosystems where plants and animals live. Display various pictures showing the variety of ecosystems. As each one is shown, write the name the ecosystem on the chart paper followed by a symbol of it. Ecosystems named should include desert, grassland, tundra, ocean, forest, rainforest, and wetland.
4. Display the “Name That Ecosystem!” overhead transparency. Ask the students to identify each ecosystem and explain why they made each choice. The students should state what is unique about each. (The ecosystems are, left to right, top to bottom: aquatic/ocean, grassland, desert, rainforest, tundra, and wetland.)
5. Explain to the students that tundra is an ecosystem of Alaska. Read the selected text to the class, having the students listen for clues about the ecosystem of Alaska. Attend to any unfamiliar vocabulary and concepts. Chart the students’ ideas. After concluding the selected text, review the students’ ideas about the tundra ecosystem. Record responses on chart paper.
6. Ask the students to think about the tundra ecosystem and the brown bear from the Alaska quarter. Distribute a “Animal ABC” worksheet to each student. Explain to the students that they will be doing research about the brown bear and one of the



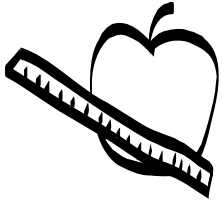
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ecosystems where it can be found. Explain that brown bears can live in several different ecosystems but the students will be focusing mainly on the tundra ecosystem.

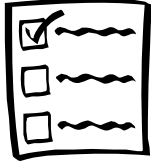
7. Tell the students they will be researching three topics: the characteristics (distinguishing traits), behaviors (things animals do), and adaptations (traits that help an animal meet its needs in the place where it lives) of the brown bear in the tundra ecosystem.
8. Take the students to the computer lab and allow them time to complete their “Animal ABC” worksheet.
9. As a class, review the students’ findings. Record the student responses on the “Animal ABC” overhead transparency. Discuss the characteristics, behaviors, and adaptations of the brown bear and why they are all important to life in a tundra.
10. Collect the students’ worksheets.

Sessions 3 and 4

1. Display the chart paper and review the material covered in the previous sessions.
2. Display the transparency or photocopy of the “Alaska Quarter Reverse” page. Remind the students that living parts of an ecosystem depend on the nonliving. Guide the students to also see how the food chain is reflected in the bear and the fish on the coin. The students should see the relationship between the various animals and the environment in the ecosystem.
3. Explain to the students that they will be choosing an ecosystem other than the tundra to show its similarities and differences as compared to the tundra.
4. Redistribute the students’ “Animal ABC” worksheets from Sessions 1 and 2. Divide the class into pairs and distribute another “Animal ABC” worksheet to each pair.
5. Explain to the students that they will be doing the same type of research and reporting activity as they did in the previous sessions. They will show their findings by creating a poster and writing a descriptive paragraph.
6. As a class, create a list of animals that the pairs of students want to research.
7. Allow the students time to visit the computer lab, look through texts, and complete their worksheets.
8. Review the students’ worksheets. Allow time for the each pair to create its poster and for each student to write his or her paragraph.
9. Collect the students’ worksheets.
10. Have the students share their posters and paragraphs with the class. Display them in the classroom.



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ASSESSMENT

- Analyze the students' worksheets for understanding of the animals and ecosystems.
- Use the students' class participation to evaluate whether they have met the lesson objectives.
- Assess the completed posters and paragraphs.



ENRICHMENTS/EXTENSIONS

- Have students research other quarter reverse images and find one to match each of the ecosystems.
- Have students research other animals from another ecosystem and create a picture book of animals to share with book buddies.



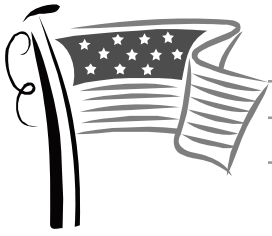
DIFFERENTIATED LEARNING OPTIONS

- Allow students to work in small groups for Sessions 3 and 4.
- Allow students to record the information using a scribe.



CONNECTION TO WWW.USMINT.GOV/KIDS

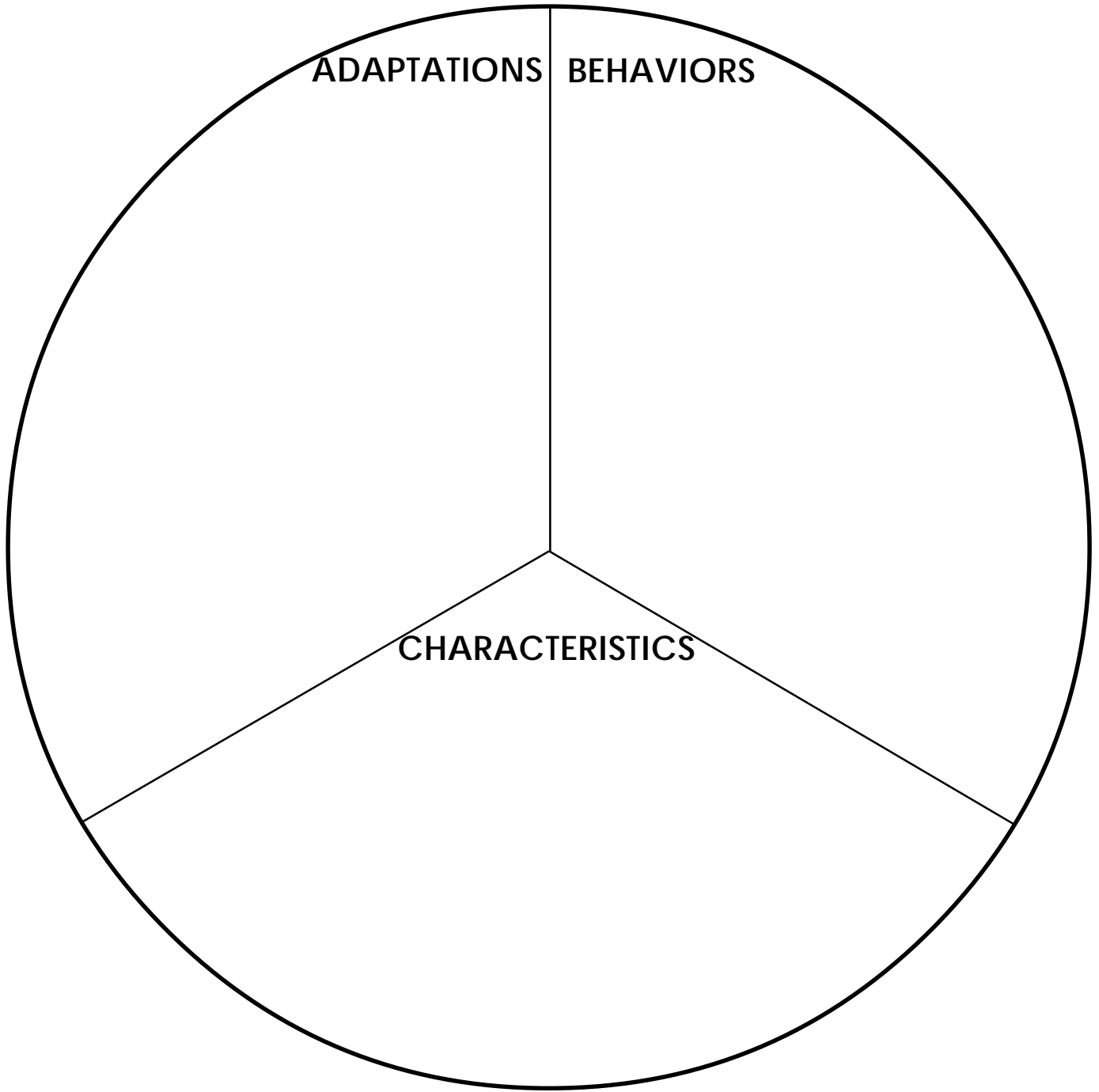
Have students learn more about behavioral and physical adaptations of animals by using the lesson plan “Can You Adapt?” based on the Montana quarter reverse found at: www.usmint.gov/kids/teachers/lessonPlans/50sq/2007/0203-1.pdf.



Name _____

Animal ABC

Animal _____





Name That Ecosystem!

Identify the desert, ocean (aquatic), tundra, grassland, wetland, and rainforest ecosystems below.

ECOSYSTEM _____



ECOSYSTEM _____



ECOSYSTEM _____



ECOSYSTEM _____



ECOSYSTEM _____



ECOSYSTEM _____





Alaska Quarter Reverse

