



## Desert Animals

**Grade Level:** Upper Elementary – Middle School (can be adapted for High School)

**Duration:** Three class periods

**Purpose:** In this lesson, students will learn about desert animals and their adaptations through individual research and by participating in a classroom activity called *Adaptation Jeopardy!*

**Objective:** Students will be able to state that in order for an animal to survive within an ecosystem it must be physically and behaviorally adapted to the conditions of its environment. Students will be able to identify three adaptations for a Great Basin Desert animal and will be able to write a story about that animal from the animal's perspective.

**Nevada Department of Education State Standards:**

Organisms and Their Environment (Life Science Unifying Concept C): A variety of ecosystems and communities exist on Earth. Ecosystems are dynamic interactions of organisms and their environment. Ecosystems have distinct characteristics and components that allow certain organisms to thrive. Change in one or more components can affect the entire ecosystem.

**Materials:**

4" × 6" index cards (three for each student)

Pencils and paper

Small chalkboards or dry-erase boards and appropriate writing utensils

Reference materials about deserts and desert animals, including library books, encyclopedias, and Internet resources

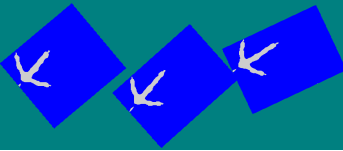
Copies of Take-Home Activity Sheet: A Day in the Life

**Teacher Information:** Before class begins, create a list of desert creatures native to the Great Basin Desert in which the number of creatures is equal to the number of students in your class. Make sure that the creatures you choose fall into the following four categories: mammals, birds and fish, reptiles and amphibians, and insects and spiders. Examples of Great Basin Desert animals include: Mule Deer, California Quail, Coyote, Black Widow Spider, Badger, and Gopher Snake. For a larger list, check out the animal cards for Water Canyon found in this educational kit.

**Anticipatory Set:** Begin the lesson with a class discussion of desert biomes (a biome is a large region on the earth that has a certain climate and certain kinds of organisms). Discuss with students what they already know about the Great Basin Desert. How is this desert different from other deserts? How is it similar?

Make a list of common characteristics of the Great Basin Desert (GBD):

1. The GBD is very dry, receiving little rainfall (most of precipitation occurs as winter snow).



2. The GBD is generally very hot and dry in the summer, but is very cold in the winter.
3. The temperature during the daytime is significantly warmer than during the nighttime.

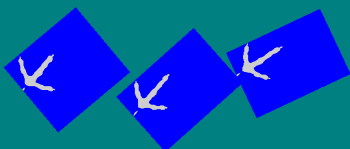
**Developing the Lesson:** Review animal adaptations with your class (an adaptation is a response or structure that helps a living thing survive). Explain that for any animal to survive within an ecosystem, it must be physically and behaviorally adapted to the conditions of its environment. Make sure students understand that physical adaptation refers to physical characteristics such as fur, eyes, and color and that behavioral adaptation refers to characteristics such as hunting strategies, breeding patterns, and social habits that help an animal cope with the conditions it faces.

Assign one desert creature from your list to each student. Then hand out three blank index cards to each student and have students write the names of their desert animals on one side of each card. Explain that these cards will be used as “game cards” in a special Jeopardy game about desert animal adaptations. Tell students that they will use print and online resources to research and identify three adaptations for their animals. On the back of each index card, students should write one adaptation and follow it with an explanation of how it helps the animal survive. Explain that these adaptations will be used as clues, so they should not reveal the name of the desert animal. For example, an adaptation could read, “This animal sleeps underground during the day.” Allow students time to research and work quietly on their index cards. Tell students they will hand in their index cards by the end of the class period.

Before class concludes, collect the index cards and pass out copies of the Take-Home Activity Sheet *A Day in the Life* to each student. In this assignment, students must write an essay on a day in the life of the animal on their index cards from the perspective of the animal. Have students include several physical and behavioral adaptations of their animal in the story and explain why these adaptations are necessary for the animal to survive within a desert biome. Explain to students that they will share their essays during the next class period in a short presentation to the class.

Begin the next class period by inviting students to share their essays with the rest of the class. Students may choose to read their essays aloud or summarize the animal and its adaptations. Encourage students to take notes, explaining that they’ll be using these facts to play a special Jeopardy game. After each student has finished his or her presentation, write the name of the creature on the board and review with the class what the animal’s adaptations are. When the presentations are finished, discuss the differences and similarities among the desert animals the class has studied. Remind students to listen well and ask questions so they will be prepared for the next day’s game of *Adaptation Jeopardy!*

The next day, before students enter the classroom, create four columns on the board. Label the columns with the four categories of desert creatures assigned: Mammals, Birds & Fish, Reptiles & Amphibians, and Insects & Spiders. Using tape or adhesive, post one index card from each student under the correct category, with the adaptation details facing out. (Since each student



should have submitted three index cards, you should be able to play three rounds of the game.)

Arrange students into groups of four or five. The groups will compete against one another in the game *Adaptation Jeopardy!* Explain to the class that groups will take turns guessing what animal matches the adaptation listed on an index card; for example, if a card reads, “This animal has a big ears to dissipate heat in the summer,” the correct answer is “What is a Mule Deer?” Award 10 points for each correct answer, keeping score on the board. Each group controls the board until its members make an incorrect answer. If a student receives one of his or her own cards, the student must pass and play the next round.

**Adaptations for older students:** Have older students research desert plants as well as desert animals. Tell students to focus on the specific habitat and range where their plant or animal is found. Then discuss how desert life varies among the Great Basin Desert. How does the Great Basin Desert differ? How are these differences reflected in the plant and animal adaptations?

### Discussion Questions:

1. In recent years, humans have had a significant negative impact on natural habitats. Many animal species have not been able to adapt quickly enough to the changes humans have brought to environments around the globe. As a result, more than a thousand species of animals are in danger of extinction. The Mountain Lion’s shrinking habitat is one example. Discuss if and how humans can prevent the Mountain Lion and other endangered desert animals from becoming extinct.
2. The Paiute are Native Americans who live in the Great Basin Desert. Traditionally, they were hunters and gatherers; they did not have an agricultural society. Hypothesize about the necessary means they would have had to do in order to survive in the desert.
3. Describe one of the many relationships that exist between particular animals, including insects (which are animals), and species of plants living in the desert.

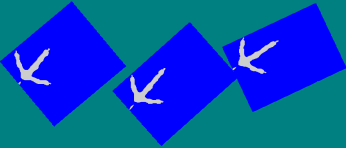
**Evaluation:** You can evaluate your students on their assignments using the following three-point rubric:

Three points: complete descriptions of desert animal’s physical and behavioral characteristics; clear, well-reasoned explanations of how the animal is adapted for life in the desert

Two points: partial descriptions of animal’s physical and behavioral characteristics; fairly clear explanations of how the animal is adapted for life in the desert

One point: partial descriptions of animal’s physical or behavioral characteristics; some explanation of how the animal is adapted for life in the desert

You can ask your students to contribute to the assessment rubric by determining how many characteristics should be mentioned in the descriptions.



Source: Adapted from a lesson by Jessi Hempel, former fourth-grade teacher and current member of the Bay Area School Reform Collaborative.

