The Bio/Diversity Project

Sonoran Desert Biodiversity Outreach Curriculum Fall 2025
Lesson 3: Desert Adaptations

Grade Level: 6th
Time: 50 minutes

AZ Science Standards:
- *6.L2U3.12* Engage in argument from evidence to support a claim about the factors that cause species to change and how humans can impact those factors
- *6.L2U1.13* – Develop and use models to demonstrate the interdependence of organisms and their environment including biotic and abiotic factors.

Student Facing Learning Objectives:
- I can describe how the physical and/or behavioral adaptations of animals allow them to survive in the Sonoran Desert.
- I can design my own desert creature with physical and behavioral adaptations that allow it to survive in the Sonoran Desert.

Guiding Questions:
- Why do animals need to adapt to the desert climate and conditions?
- What are physical and behavioral adaptations that allow animals to survive in the Sonoran Desert?

Vocabulary:
- Adaptation - process by which animals and plants change so that they're better suited to survive in an environment

Materials:
- Lesson 3 Slides
- L3: Ultima Hora Template (one per student OR one per pair of students, depends on how you divide the work)
- L3: Desert Adaptations Notes (one per student)
- L3: KEY Desert Adaptations Notes (for teacher reference)

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🌵 Lesson 3: Desert Adaptations🌼

Mini-Lesson (27 minutes)

Section Objective: To introduce the concept of adaptations and review core behavioral and physical adaptations exhibited by organisms of the Sonoran Desert.

Introduce to class the concept of change and adaptation (7 min):

- Introduce the scientist of the week. Ask an engaging question that allows students to interact with what they learned about the scientist of the week.
- Ask student volunteers to read the learning objectives aloud.
- Opener: What is the biggest change you've experienced when transitioning from 5th grade to 6th grade? How did you adapt/adjust to that change?
- Adaptation is the process by which animals and plants change so that they're better suited to survive in an environment. Just like we adapt to new environments and circumstances, so do animals.
- What circumstances/conditions do animals/plants living in the Sonoran Desert have to adapt to? What conditions would make surviving here particularly hard? (the heat and lack of water/rain).
- Animals/plants of the Sonoran Desert must learn how to adapt to an environment with little water and lots of heat. Adaptation is important. It allows us to get used to new teachers, new routines, new rules. It allows animals/plants to get used to harsh environments, such as places with high heat and little rainfall. A lot of our success (and those of desert animals/plants) depends on one's ability to adapt.
- In ecosystems like the Sonoran Desert, there are many examples of animal adaptations. Any guesses?
- Biodiverse ecosystems don't just mean diversity in the organisms we see. It also means diversity in the types of adaptations organisms exhibit. Ecosystems with higher biodiversity offer a range of adaptation strategies. Today we'll be learning about some of the most important adaptation strategies!

Exploring Behavioral and Physical Adaptations (20 min):

- Tell students that today we will be looking at two types of adaptations: behavioral (what our bodies do) and physical (what our bodies look like). We'll begin by reviewing behavioral adaptations - things animals *do* to survive the Sonoran Desert.
- Distribute the Desert Adaptations Notes sheet to each student. The KEY Desert Adaptations Notes sheet is also available for teacher reference.
- Tell students that we will be taking some notes on examples of behavioral and physical adaptations. There will be 4 behavioral adaptations and 4 physical adaptations for students to take notes on.

- Walk students through the slides listing the 4 behavioral adaptations. Students will copy the behavioral adaptations on the slides onto their notes sheet.
- With each behavioral adaptation, project its corresponding image and BEFORE revealing the behavioral adaptation which students will record on their notes sheet, ask students to make a prediction about what behavioral adaptation that photo depicts. You might ask guiding questions to help prompt student thinking:
    - Guiding question for behavioral adaptation 1: Why might the animal benefit from the hole?
    - Guiding question for behavioral adaptation 2: What is the mountain lion doing in this photo? Does it look content? Why?
    - Guiding question for behavioral adaptation 3: When was this photo taken? Why might the javelina be active at night and not the day?
    - Guiding question for behavioral adaptation 4: What is the rabbit eating? Do you think this cactus flower might have some water in it?
- Follow the same process for the physical adaptations slides:
    - Guiding question for physical adaptation 1: What do you notice about the saguaro stems? Why might they be that wide and chunk?
    - Guiding question for physical adaptation 2: Why do saguaros have spines? Now that we know what saguaros keep in their trunks, what might the spines protect?
    - Guiding question for physical adaptation 3: What do you notice about the color of the coyote's fur? When it's hot outside, is it better to wear white or black? Why?
    - Guiding question for physical adaptation 4: These are desert tortoise claws. Why might animals in the sonoran desert need sharp claws? What can they do with these claws?
- As you review each behavioral and physical adaptation, be sure to give students a moment to record the adaptation on their notes sheet before moving on to the next adaptation.

Instructions & Work Time (18 minutes)

Section Objective: To provide students a chance to apply what they learned about Sonoran Desert adaptations by blending their knowledge with their creativity.

Give Instructions for Final Task (3 min):

- Using their Desert Adaptations Notes sheet for inspiration, students will now create their own Sonoran Desert creature that is drought-tolerant and can survive in high-heat environments.
- This Sonoran Desert creature cannot already exist and it must exhibit at least TWO behavioral adaptations and TWO physical adaptations that help it survive in the extreme heat.

- Students will “publish” the discovery of their creature on the front page of the Roskrudge Diario. They will use the L3: Ultima Hora Template as their workplace and guide.
- On the right side of theL3: Ultima Hora Template, students will draw their newly discovered creature. On the left side of the template, they will describe both the behavioral and physical adaptations of their creature.
- As a model, teachers should complete an example of their own front page cover of the Roskrudge Diario, illustrating their newly discovered creature.
- Encourage students to be creative and silly while also applying what they learned about desert adaptations.

Student Work Time (15 min):

- Distribute colored pencils.
- Allow students to work in pairs if you think they’ll work faster that way and if there is limited time.
- Walk around room to monitor their progress. Provide time checks as needed.

Wrap-Up (5 minutes)

Section Objective: To provide an opportunity for students to practice their verbal explanation skills by sharing how their creature exhibits critical adaptations.

Share Out (5 min):

- Students who are finished can share their newly discovered creatures, along with their unique adaptations, with a partner or pair of partners.
- If time permits, have partner pairs share their creatures with the entire class.