



The Bio/Diversity Project

Sonoran Desert Biodiversity Outreach Curriculum Fall 2025 Lesson 1: Introduction to Biodiversity with Sonoran Desert Food Webs

Grade Level: 6th

Time: 50 minutes

AZ Science Standards:

- 6.L2U1.13 – Develop and use models to demonstrate the interdependence of organisms and their environment including biotic and abiotic factors.
- 6.L2U1.14 – Construct a model that shows the cycling of matter and flow of energy in ecosystems.

Student Facing Learning Objectives:

- I can provide a basic definition of the term biodiversity.
- I can exemplify the importance of producers, prey, and predators in an ecosystem through the creation of a food web.

Guiding Questions:

- Why is biodiversity important to an ecosystem?
- How are producers, predators, and prey reliant upon one another in an ecosystem?

Vocabulary:

- Biodiversity: the variety of life within an ecosystem
- Producers: organisms that get energy from the sun
- Prey: organisms that get eaten by predators to give them energy and eat producers
- Predators: get energy from eating other living things
- Food Web: the interconnection of energy paths

Materials:

- [L1 Slides: Biodiversity](#)
- Scratch paper for food chains (half sheets)
- [Desert Landscape Coloring Page](#) (copies for all students)
- Coloring utensils
- [Sonoran Desert Food Web](#) (copies for all students)



Lesson 1: Introduction to Biodiversity with Sonoran Desert Food Webs

Mini-Lesson (30 minutes)

Section objective: Introduce the teachers, the concept of biodiversity, and how energy is transferred from one organism to another.

Introduction to class and biodiversity (10 min):

- Display Slideshow and introduce the Bio/Diversity Curriculum and yourselves.
- Present the routine of Scientist of the Week. Tell students each week we'll start the lesson with some cool facts about a scientist making a big impact on the world and their communities.
- Discuss this week's Scientist of the Week. Ask a guiding question (or two) about the scientist so students understand what they do and/or how their work relates to students' lives.
- Introduce the learning objectives. Explain to students that learning objectives are like goals or targets of what we want to learn together today. Choose students to read the objectives aloud:
 - I can define the term biodiversity.
 - I can show the importance of producers, prey, and predators to an ecosystem through the creation of a food web.
- Break down the term biodiversity. Ask students if they know what the root word "bio" means. Take some guesses. After you collect guesses, tell them "bio" means life. Do the same with the word "diversity". Take guesses and then tell them "diversity" means variety.
- Based on this word part knowledge, what can we infer "biodiversity" means?
- Share the definition of biodiversity as the "variety of life." Explain that this is often discussed in reference to a specific ecosystem, like the Sonoran Desert.
- Turn & Talk: Why is variety a good thing in an ecosystem? What might happen if we only had one kind of plant or one kind of animal in the desert?
 - a. Encourage students to think about how having only one option makes the whole system fragile. If that plant or animal disappears, the ecosystem could collapse. Tell them you will demonstrate that in the next activity.

Exploring Food Chains (10 min):

- Tell students you are going to be creating a food chain, which is an illustration showing where your food comes from. Show them your example.

"Today I ate a turkey sandwich. I will focus on one core ingredient: the turkey."

 - Turkey → insects → plants → sun



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- As you present your food chain, make your thinking come aloud and engage students with questions: “Turkeys get their energy to grow big and strong from what they eat. What do they eat? (insects). Okay where do insects get their energy to live and move? (plants). Okay so then where do plants get their energy to grow? (the sun).”
- Distribute half-sheets of paper and tell students they will choose one food they ate for lunch (or will eat for lunch) and do the same. Make a food chain with arrows. If you’re not sure what to put after the arrow, ask yourself, “What does this animal/plant eat in order to grow? What gives it energy?”
- Give students 3 minutes to do this. If they finish early, they can share their food chains with an elbow partner.
- Choose 2-3 students to share their food chains aloud with the class.
- Ask all students: What would happen if a species from your food chain didn’t exist? What might happen to the other species on your food chain?
- Emphasize the main idea of interconnectedness: All forms of life in an ecosystem are interconnected. If one disappears, all are affected.

Exploring Food Webs (10 min):

- Briefly explain the difference between a Food Chain and a Food Web: Food chains show one direct energy path whereas food webs show how all the energy paths are connected.
- Tell students you’ll be focusing more closely on food webs and important vocabulary within a food web. Distribute the [Sonoran Desert Food Web](#).
- Depending on time and personal preference, you can ask students to record the definitions of each word on the back of their food webs.
- Begin reviewing vocab and illustrating examples of each vocab word on the food web graphic:
 - Producers = get energy from the sun (e.g: grass, plants, etc)
 - Prey (primary and secondary consumers) = get energy from eating producers & primary consumers (e.g. rabbits)
 - Predators = get energy from eating primary & secondary consumers or other living things (e.g. coyotes)
- Explain how producers, predators, and prey are examples of biodiversity in our ecosystems. We need all three in order to have healthy ecosystems.
- Ask students: What would happen if saguaros disappeared? How many arrows would break? We ask this question to help show biodiversity’s role in keeping energy flowing.

Work Time (15 minutes)

Section Objective: Students illustrate the connections different organisms have to one another through the creation of a food web.

Create your own food web:



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1. Ask students to design and color their own Sonoran Desert Landscape and include a food web in their design.
 2. Students should label or show the connections through arrows and annotations (show example).
 3. Pass out colored pencils and markers and a [Desert Landscape Coloring Page](#), and have them decorate it.
 4. Tell students to make sure that they have all producers, predators, and prey in their landscape!
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Wrap-Up (5 minutes)

Section Objective: Students communicate to their peers and teacher how different forms of life are reliant upon one another, illustrating such interconnection through their food webs.

Exit Ticket–Share Food Webs:

- Ask students to share the landscapes they've made (you can ask for 2-3 individual volunteers or have students find one partner to share their food web with).
- Ask students to describe the organisms in their landscapes. Which categories do they fall into? (producer, prey, predator)
- What would happen if one of them were removed? How would other forms of life on your food web be affected?
- How does your food web demonstrate the importance of biodiversity?