The Bio/Diversity Project

Lesson2
Sonoran Desert Food Webs

Grade Level: 6th-8th
Time Teaching: 55 minutes

This lesson has been adapted from: Weaving the Web; Food Webs and Desert Landscape Painting

AZ Science Standard:	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 8.L4U1.11 Develop and use a model to explain how natural selection may lead to increases and decreases of specific traits in populations over time.
Learning Objective:	Students will be able to describe predator-prey relationships.
Scientist of the Week:	● Dr. Earyn Mcgee  ● Conservation Biologist who recently completed her PhD at the University of Arizona and now works at the LA Zoo in a position created especially for her. ● Los Angeles, CA ● Dr. McGee is a science communicator (someone who aims to inform others about the world of science in a more simplified manner) that advocates for the rights of all people to be able to love and care for the natural world. With her efforts, people can enjoy and care for our world, nature, and the environment with less restrictions.

Vocabulary	Materials

• Producer • Predator • Prey	• Powerpoint • Lesson 2 Worksheet • Butcher Paper • Color Pencils/Markers (Class Set)

Guiding Questions

- Why is it important to have many different animals, plants, and humans?
- How do animals interact with each other in nature?

Engagement Activity (5 minutes):

- Ask students "How are we feeling today?"(thumbs up, thumbs middle, thumbs down)
- Ask students, "What did you have for dinner last night?" Allow students to respond by raising their hands
- Choose one meal discussed by the students and pick out one ingredient from that meal (would be easiest if it were some sort of meat), and ask where that ingredient comes from. Draw/write the original form of the ingredient on the whiteboard.
    - ex. hamburger → burger comes from a cow → draw a cow on the board
- Ask students where this ingredient gets its energy to grow from and what provides its nutrition. Draw/write their answers on the board next to the first ingredient. Draw an arrow between the two.
    - ex. cow eats grass to grow
- Ask students how the grass grows.
    - Draw answers on the board and draw an arrow between the answer and the nutrition.
      ex. grass gets it energy from the sun
    - Briefly explain photosynthesis, if needed (plants take sunlight and turn it into energy)!
    - This section can be shortened or lengthened depending on the meal/initial ingredient chosen on the day of teaching. In the end, all things should lead back to the sun.
- Explain to students what we've created was a food chain, which is what we'll be learning about today.
- Ask students what they already know about food chains

Exploratory Activity (10 minutes):

- Introduce the idea of a food chain and incorporate the terms producer, predators, and prey. The sun is the primary source of energy for our planet, plants take in sunlight, then animals eat plants, and other animals eat those animals, etc. This is how energy moves from organism to organism.
    - Producers = get energy from the sun (ie: grass)

- Predators = get energy from eating other living things (ie: coyotes)
- Prey = get eaten by predators to give them energy and eat producers (ie: rabbits)

- Show an example of a food chain.
  - A food chain is the order in which living things give energy to other living things
    - Show an example of a food chain with Sonoran Desert plants and animals.
- Show short clips of cacti growing, bunnies eating cacti, and hawks hunting bunnies to demonstrate how the food chain can move from organism to organism.
  - Ask students which is the producer, prey, and predator in these videos
- Ask students, "So, how are predators and prey different?"
- Showcase physical differences between predators and prey in food chains with images of predators vs. prey on PPT
  - ex. teeth shape/size/number, size, placement of their eyes

Explain Activity (20 Minutes):

- Divide students into pairs
- Pass out the worksheet for the activity, one worksheet per pair. Tell the students one person will be the writer while the other will be doing the research on the laptop.
- Before releasing the students to research each living organism, do a short tutorial on how to find reliable sources on google.
- Flip through each slide and have the groups follow the instructions
  - Read out the instructions clearly.
  - Provide a time limit for each task (e.g., 2-3 minutes per slide).

Extension Activity (10 minutes):

- Have students pair up with another pair to make a group of four
- Pass out Color Pencils/Markers and butcher paper to each group
- Show the class the food web you created as an example (could be on butcher paper or slide)
- Ask students to design and draw their own Sonoran food web. Students should label or show the connections through arrows.
- Tell students to make sure that they have all their producers, predators, and prey in their food web!

Evaluation Activity (5 minutes):

- Ask students to share the food webs they've made. If there is enough time, ask students to participate in a gallery walk.
- Ask students to describe the organisms in their landscapes and which fall into which categories (producer, prey, predator)
- Distribute incentive items (such as stickers or candy) to thank them for participating
- Optional Discussion:
  - Checkin: Was the activity fun? (thumb meter)
  - What is a predator, prey, and producer?
  - How do food webs allow us to see the relationship between different living organisms? How does this relate to Biodiversity?