COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES
Women in Science & Engineering

The Bio/Diversity Project

Lesson 1: Introduction to Sonoran Desert Pollinators

Grade Level: 4-12th

This lesson has been adapted from: Flowers Seeking Pollinators and Pollination Investigation Field Journal and Design a Flower

AZ Science Standard:	Cheat sheet for AZ science standards *HS.L4U1.27* ● *Obtain, evaluate, and communicate evidence that describes how changes in frequency of inherited traits in a population can lead to biological diversity*
Learning Objectives:	1. Students will be able to identify three Sonoran Desert pollinators and describe the specific flower traits that attract each one. 2. Students will be able to analyze pollinator observation data to determine which flowers are most visited by their assigned pollinator and explain why. 3. Students will be able to construct a scientific explanation using evidence to describe how pollinators contribute to the survival of Sonoran Desert plants.

Prepared by Lily McMullen, January 2025

Scientist of the Week:	**Gillian Bowser** [link to bio] ● Focuses on pollinators like bees and butterflies. ● Travels globally to connect people and nature. ● Promotes diversity in science. ● Combines science with policy to protect species. ● Inspires everyone to care for the environment. 

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Vocabulary	Materials
• Biodiversity • Data science • Pollinators • Pollination	• Google Slides Lesson 1 Data literacy activity: • One per team (2-4) of each: - Sonoran desert-adapted data sheet - Printed pollinator profile cards - Printed constructing explanations worksheet • Paper and markers/colored pencils for each team of (2-4)
Guiding Questions: • *"What traits do you think your pollinator looks for in a flower?"* • *"How does your pollinator help the plant survive?"* • *"Why are pollinators important in the Sonoran Desert?"*	

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Team Size: 2-4 students per team (each team receives one copy of each worksheet)

Engage/Introduction

Time: 10-20 minutes

Objective: Capture students' interest and activate prior knowledge.

Activity:

- Show the list (and/or photos!) of Sonoran Desert pollinators in the slideshow.
- Ask:
  - "What pollinators have you seen before?"
  - "What do you think they do for plants?"
- Facilitate a brief discussion and introduce the day's objectives.

Explore

Time: 15-30 minutes

Objective: Investigate pollinator behaviors and flower traits.

Activity:

- Teams work on the **"Pollinator Profiles" worksheet** to learn about specific pollinators.
- Discuss flower traits and their role in attracting pollinators using the **"Flowers Seeking Pollinators Data Sheet."**
- Teams predict which flowers attract specific pollinators.

Explain

Time: 10-20 minutes

Objective: Develop scientific explanations based on data.

Activity:

- Teams use the **"Constructing Explanations" worksheet** to identify three flower traits and provide evidence supporting their pollinator's preferences.
- Facilitator leads a class discussion to clarify why specific traits matter for certain pollinators.

Extend

Time: 15-30 minutes

Objective: Apply knowledge creatively.

Activity:

- Present information about pollinators in slideshow
- Each team chooses a pollinator (they can do this however they like, including searching the internet)
- Each team designs a flower/plant that would attract their chosen pollinator using paper and markers/colored pencils.
- Include at least three traits (e.g., color, shape, scent) that match their pollinator's preferences.
- Teams write a sentence explaining why their flower would attract their pollinator, based on

the traits they included.

Evaluate

Time: 5-10 minutes

Objective: Reflect on learning and assess understanding.

Activity:

- Teams present their designs from the previous activity to the rest of the class.
- Facilitate a discussion comparing different pollinators and flowers.
- Wrap up with a quiz or reflection:
    - “What surprised you most about pollinators today?