

STUDENT GUIDE

ELABORATE LESSON 19

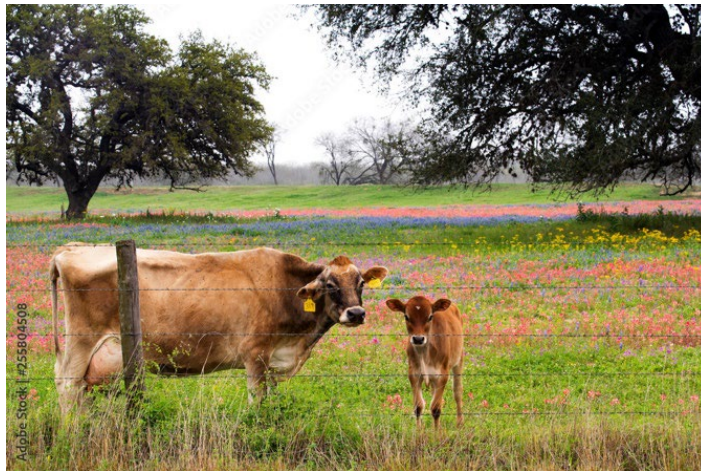


Part 1: Our Motivation

Record what we were trying to figure out that led to this investigation.



Part 2: Observing a New Phenomenon



What do you observe in this picture regarding biodiversity? What do you wonder?

How do you think this land's biodiversity compares to monoculture croplands? Or to undisturbed lands?



Part 3: Analyzing Data on Changes in Biodiversity

After completing the computational model, what average level of biodiversity did you calculate for the three sample sites for this location? How does it compare to the biodiversity for a monoculture crop field and to the undisturbed lands that you determined in Lesson 16?

What can you conclude from this data about the desired effect of the way this grazing system is designed?



Part 4: Developing a Model of How Grazing Can Improve Biodiversity

Create a concept-map model that shows how you think adding cattle to a pasture with grazing can increase biodiversity and how that can help humans.

Record an explanation of your model.



Part 5: Obtaining Information from Text

Read the text provided. Record evidence from the text that can help you explain how grazing can change the biodiversity impacts of the dairy system.

Selected Quotes for Evidence



Part 6: Revise a Model and Use It to Explain the Phenomenon

Revise your model using the evidence you have gathered in Part 5.

Use your model to construct an explanation of how adding cattle to a pasture with grazing can increase biodiversity and how that can help humans. In your explanation, be sure to:

- Explain how grazing can positively impact biodiversity.
- Explain how changes in biodiversity impact humans, including how biodiversity can enhance ecosystem functioning and productivity.