

Ecosystems Unit Plan

GRADE LEVEL EXPECTATION:

Human activities can deliberately or inadvertently alter ecosystems and their resiliency.

BIG IDEAS:

System, Evidence, Change, Constancy, Explanation.

STUDENTS WILL (KNOW):

- How ecosystems change naturally
- How humans may change an ecosystem
- Biotic vs. Abiotic factors.
- Population fluctuation of plants/animals.

STUDENTS WILL (DO):

- Analyze and interpret data about human impact on local ecosystems
- Recognize and infer bias in print and digital resources while researching an environmental issue
- Use technology resources such as online encyclopedias, online databases, and credible websites to locate, organize, analyze, evaluate, and synthesize information about human impact on local ecosystems
- Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate an environmental issue
- Critically evaluate evidence (with supported claims) for ways humans affect ecosystems.
- Develop, communicate, and justify an evidence-based scientific example of how humans can alter ecosystems

IF NOT, THEN WHAT?

Mixed Grouping by ability. Put responsibility on individuals and group members. Revisit/Review concepts individually and have students create final product based on their own level/strengths. Review ideas relating to ecosystem studies in 6th/7th grades.

IF SO, THEN WHAT?

- ✓ Challenge each individual to think of a problem within ecosystems that humans have changed for the better. Examine reasons why.
- ✓ Use Colorado River studies and Tamarisk removal as start of conversation.

Unit Comments:

- ✓ Check for ties to social studies. Possible PFL content connections for Land use and Environmental Education.
- ✓ Invite in Division of Parks and Wildlife for Hunting conversation. (Hunting debate!).

ACTIVITIES FOR LEARNING : BOOK CH. 24-26 (GREEN)

LAUNCH: Title Page-Vocab. Careers in EcoSystem, Draw a local EcoSystem

1. Ecosystems around us.
2. How do we interact with surrounding Ecosystem?

EXPLORE (Inquiry):

1. **Foldable: Key Vocabulary necessary:** biosphere, ecosystem, ecology, population, community,
 - a. habitat, limiting factor, biotic factor, abiotic factor, carrying capacity.
2. **TED Video: NYC Ecosystem. Predictions.**
3. **GREAT ECOSYSTEM DEBATES:**
 - a. Each student gets: time to research, supporting evidence, A stakeholder role.
 - b. One Student Moderator
 - c. Materials: Lots of printed articles of topics.
 - d. Sticks with Roles Listed (Landowner, Politicians, Environmentalists, Future kids, etc.)

3 DEBATE TOPICS (2 classes each: 1 research, 1 debate)

- A. Colorado River: (Magazine, Video)
- B. Hunting: (article, video)
- C. TBD (Student choice, as a class)

4. **Wolf Demonstration:** How have humans affected this population over time. Changed ecosystems?

SUMMARY:

Choose a topic. Write a letter to the mayor of a local area, discussing ways that humans are altering the ecosystem and describe a plan of action on how they can help with this situation.

Requirements:

Evidence of altering (claims).
Proposed plan of action.
300 words minimum.
Typed.