



# Teaching Ecosystems



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Green indicates Main Lesson for each Objective. • Indicates Original Work by MJ Krech

### **Objective 1: Identify and describe the factors which limit the growth & development of populations and how populations adapt to limiting factors (67 pages)**

- Objective 1 Lesson Plans
  - Teaching Idea: Biotic & Abiotic
  - Biotic & Abiotic PPT Printed Slides
  - Limiting Factors PPT Printed Slides
- Factors Limiting Growth of a Population Worksheet
- Limiting Factors of the Physical Environment Worksheet
- Limiting Factors of the Biological Environment Worksheet
- Limiting Factors Worksheet #1
- Limiting Factors Worksheet #2
  - Oh, Deer! Activity - Teacher's Guide**
  - Oh, Deer! Student Assessment Page
  - Oh Deer, Predation or Starvation
- **Organism Design Project**
- Organism Design Rubric
  - Environment/Biome Cards, • Study Guide AND Project
  - Real? Animals Activity
  - Critter Creation Activity
- Limiting Factors Vocab Cut & Paste WS
- Limiting Factors Vocab Team Game
  - Seabird Survival Card Game
  - Biotic & Abiotic PowerPoint
  - Limiting Factors PowerPoint

### **OBJECTIVE TWO: Design and conduct an experiment on limiting factors of a population (12 pages)**

- Objective 2 Lesson Plans
  - Population Study Planning Sheet**
  - Population Study Plan
  - Population Study Experimental Design Planning
  - Population Study Observations Record
  - Population Study Written Report Guidelines
  - Populations Study Written Report
  - Populations Study Report Rubric

### **OBJECTIVE THREE: Describe how ecosystems are interconnected by biological, chemical, and physical processes so that changes in one ecosystem can have local or global consequences. (31 pages)**

- Objective 3 Lesson Plans
  - How Ecosystems Work - Food Chains & Webs PPT Printed Slides
- Cut & Paste Food Chain Worksheet
  - Weaving the Web Activities**
  - The Food Chain Game
  - Cut & Paste Food Web Activity
  - How Ecosystems Work Activity
- Food Web Cut & Paste Vocab
- Food Web Vocab Team Game
  - Build a Food Web Activity

Amazon Rainforest Food Web Worksheet  
Desert Food Web Worksheet  
Sagebrush Food Web Worksheet  
Swamp Food Web Worksheet  
Corn in the Classroom Food Web Activity

**OBJECTIVE FOUR: Explain how overpopulation in an ecosystem can lead to depletion of resources and species. (17 pages)**

- Objective 4 Lesson Plans
- **The Popcorn Population Game**
- The Popcorn Game Worksheet
- Population Circle Activity
- Human Population Growth Worksheet
- The Otter Game
- Overpopulation Exercise

**OBJECTIVE FIVE: No two species can occupy the same niche in an ecosystem so that different species can coexist and help maintain the stability of that system. (26 pages)**

- Objective 5 Lesson Plans
- Niche Teacher Background
- What is a Niche? Teacher's Guide
- **What Niches Are Commonly Found in an Ecosystem? Activity**
- The Riddle of the Niches
- What is a Niche? Worksheet

**OBJECTIVE SIX: Human decisions concerning the use of resources can alter the stability and biodiversity of ecosystems. (17 pages)**

- Objective 6 Lesson Plans
- How to Introduce/Review Endangered, Extinct, and Threatened
- **Endangered Species Project**
- Endangered Species List with Links
- Endangered Species Preparation Sheet
- Endangered Species Rubric
- Endangered Species Presentations Listening Guide
- The Influence of Human Activity on the Environment PPT Printed Slides
- Warm Up for Human Influence
- The Borneo DDT Case Study
- The Influence of Human Activity on the Environment PowerPoint

**OBJECTIVE SEVEN: As energy flows through the ecosystem, all organisms must transform the portion of energy available to them into usable forms. PLUS: All organisms, including humans, are part of and depend on one global food web that begins with organisms at the bottom of the energy pyramid. (22 pages)**

- Objective 7 Lesson Plans
- **Bottle Ecosystem**
- Food Chain Worksheets and Puzzles
- Forest Food Web Activity
- Pond Food Chain Worksheet
- Desert Video Followsheet
- Desert Ecosystem Worksheet
- Who Eats Who? Activity
- Building a Classroom Food Web Activity
- What Makes a Pond Healthy?



**OBJECTIVE EIGHT: Organisms interact with each other as producer, consumer, scavenger, predator/prey, parasite/hose, decomposer, etc. (50 pages)**

- Objective 8 Lesson Plans
- Ecology Teacher's Notes
- Field Trip Teacher Notes
- Ecology Lesson Plan
- Field Trip Lesson Plan
- Ecology Worksheet
- Field Trip Worksheet
- **Pond Water Ecosystem Lab**
- Tips for Collecting Pond Water Water Organisms
- Pond Water Ecosystem - Class Analysis
- Pond Water Food Web Worksheet
- Pond Water Team Game
- Pond Water Quizzes
- Science Spot's Pond Water Survey

**OBJECTIVE NINE: Review and test/quiz. (22 pages)**

- Objective 9 Lesson Plans
- Ecology Test Review
- Ecosystem Vocabulary Worksheet
- Ecology Cootie Catchers
- A Food Chain Puzzle
- Animal Tracks BonusSheet
- White Board Team Game
- Ecosystems Quiz
- **Ecosystems Test**

• **NOTE:** Teachers have been asking for this Packet for years. I lost it all in a major computer meltdown a few years ago and until lately could NOT reproduce what had been lost. By chance, I discovered remnants of this unit on my hard drive! **Miracle!** I've had to cobble together this unit, relying heavily on the Internet. (I listed the original source for everything I could!) Everything was lost except for some basic .rtf files, which I had to reformat from memory. Some things might be better than the originals! Some things are lost forever, so I had to search on the Internet for something comparable. Even so, I think you will get a good idea of some creative, active ways to teach this subject!

