

Biology

Ecological Succession

Subject Area: Biology

Grade Levels: 9- 12

Date: November, 2009

Lesson Overview

The students will demonstrate comprehension of Biological conservation by presenting a poster, diorama, or Power Point Presentation to the class of how big business helps our environment.

Materials Included in this Lesson

- Computer- Research, Power Point Program

Other Materials for this Lesson

- Notebook, Biology Book
- Pens, Pencils, Paper, Glue, Scissors, Ruler

Skills the Student will Learn

- TSWL knowledge of Biological Conservation
- TSWL how to use and understand Biodiversity.
- Similarities & differences of Biological Communities – Biomes.
- Reintroduction Programs

Student Deliverables

- Poster Presentation
- Diorama of Bridge, Dam, Road or Aggregate site Presentation
- Power Point Presentation

Length of Lesson: 2 Days

Activity Day One

1. Warm – Up – 3 Questions – Conservation of Biodiversity. What is reclamation? How do companies give back to the environment? How can we benefit from reclamation?
2. Students will explore conservation practices such as, restoration of habitats, Natural Resources, Preserving Habitats, Potential habitat corridors, Sustainable use of natural resources, reintroduction programs and protected species, captivity and protection of species, plant and animal.

Activity Day Two

1. Warm – Up –Construct Poster/ Diorama, Power Point Pres.
2. Students will explore and put together information from the websites of businesses that have an impact on the environment, and give back to the environment for reclamation purposes.
3. Presentations will be given and students chosen for the Dinner Dec. 3rd from the best presentations.




Enrichment Suggestions

Enrichment suggestions are to go on a fieldtrip to Granite Construction or Cache Creek Nature Preserve to see how the process of Aggregate mining (rock Quarry) is done and the effects the environment & reclamation process. Another enrichment activity would be to have a guest speaker from one of the sites such as an Environmentalist come speak to the class. In addition to this the top two students who present in the class could be invited to present their Poster, Diorama or Power Point Presentation at the Externship Dinner December 3rd at SCOE from 5 pm to 8 pm.

Student Resources

(www.constructionjob4u.org, www.biaworkforce.com, www.carocp.org, <http://www.turnerconstruction.com/>, <http://www.graniteconstruction.com/>)

State Standards Met

6. Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:
 - a. Students know biodiversity is the sum total of different kinds of organisms and is affected by alterations of habitats.
 - b. Students know how to analyze changes in an ecosystem resulting from changes in climate, human activity, introduction of nonnative species, or changes in population size.
 - e. Students know a vital part of an ecosystem is the stability of its producers and decomposers, and consumers.
1.  Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:
 - a.  Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.
 - l.  Analyze situations and solve problems that require combining and applying concepts from more than one area of science.
 - m. Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.

Lesson Plan Relevance To Externship

Experiencing how Granite Construction puts into practice conservation techniques to give back to the environment is exactly what conservation biology is about. For example after mining a site of it's usable aggregate to use for roads and construction, the site can be turned into a school football field, a beautiful park with dog parks, soccer and baseball fields or even vernal pools to protect the endangered fairy shrimp. The students will explore the process of conservation biology in real business.



Rubric for the Ecological Succession Project

Student Deliverables	4 Exceeds Expectations	3 Meets Expectations	2 Approaches Expectations	1 Fails to meet Expectations
Research/ Group work	<ul style="list-style-type: none"> • Stds. work well together, not distracted, well focused, excellent teamwork, communication and ability to follow directions. 	<ul style="list-style-type: none"> • Stds. Work well together most of the time, some distractions, moderate teamwork, and follows most directions. 	<ul style="list-style-type: none"> • Stds. need improvement in working together, not getting distracted, and did not listen to directions. 	<ul style="list-style-type: none"> • Stds. fail to work productively, or to communicate well, or to collect evidence / research for their topic.
Poster/ Diorama	<ul style="list-style-type: none"> • Excellent demonstration of Conservation Biology, Biodiversity and demonstrates critical thinking, and problem solving of Conservation Biology, & Biodiversity. 	<ul style="list-style-type: none"> • Good demonstration of Conservation Biology, Biodiversity and demonstrates Critical Thinking and Problem Solving of Conservation Biology, 	<ul style="list-style-type: none"> • Needs Improvement of demonstration of Conservation Biology, Biodiversity and demonstration of Critical Thinking and Problem Solving of Conserva 	<ul style="list-style-type: none"> • Fails to meet any demonstration of competence or knowledge of Conservation Biology, Biodiversity in their Project.

		Biodiversity.	tion Biology, Biodiversity of habitat.	
Presentation	<ul style="list-style-type: none"> Well spoken, uses appropriate vocabulary that demonstrates comprehension of Conservation Biology, Biodiversity. Includes all parts of Conservation Biology, Biodiversity use specific habitat (Biome). Many diverse Native species of that Biome are explained well. 	<ul style="list-style-type: none"> Good Use of appropriate vocabulary that demonstrates some comprehension of Conservation Biology, Biodiversity. Includes some parts of Conservation Biology, Biodiversity relative to specific habitat. Most Native species of that Biome are explained 	<ul style="list-style-type: none"> Some Use of appropriate vocabulary that demonstrates comprehension of Conservation Biology, Biodiversity. Includes few parts of Conservation Biology, Biodiversity relative to specific habitat. Few Native species of that Biome are explained 	<ul style="list-style-type: none"> Fails to demonstrate knowledge of vocabulary or concepts of Conservation Biology, Biodiversity.

Conservation Biology Rubric

- Must have at least 10 slides.
- Must have works cited slide.
- Must show how Businesses practice conservation Biology

- Show the project the businesses have accomplished
- AXES
- Show how the business has increased biodiversity of the Environment
- Email me in the title bar if you want the opportunity to present your presentation at the dinner.
- Make sure you explain what you have learned