



Project 4.4.3 Ecosystem Exploration

Purpose

As an agriscience investigator, it is important to understand the environment surrounding you and the objects of your investigations. In *Activity 4.4.2 Passing Gas*, you learned one of many ways animals and plants depend on each other. A balanced ecosystem consists of a community of biological organisms, including plants and animals, existing in harmony in their natural environment.

What happens when the natural balance is upset or new organisms are introduced to an ecosystem? To answer this question, you must know the make-up and organization of the ecosystem.

Materials

Per group of four students:

- Computer with internet access
- Tri-fold display board
- 20"x30" foam board
- Modeling clay
- Animal figurines
- Assorted craft supplies

Per student:

- *Project 4.4.3 Evaluation Rubric*
- Pencil
- *Agriscience Notebook*
- *APA Citations*

Procedure

For this project, work in a group of four to complete a WebQuest on an ecosystem. Review your presentation notes from *Groups and Teams* from *Lesson 2.2 Let's Get Together* and establish norms.

Work with your group to produce a three-dimensional model and a poster. Use the model and poster to teach others about the ecosystem you researched. Document the sources used in your research using APA format. Additional details pertaining to this project are outlined on *Project 4.4.3 WebQuest*.

Conclusion

1. What physical characteristics do animals have resulting from living in that ecosystem?

Fur, feathers

2. In your opinion, have humans helped or harmed the ecosystem? In what ways?

Harmed because logging has caused species to go endangered and lose their habitats.

3. Where might similar ecosystems exist in other parts of the world?

Russia, Canada

4. How do the organisms in your ecosystem interact with other organisms or species in the ecosystem?

Some organisms eat other organisms.

5. How do the organisms in your ecosystem depend on or affect non-living factors in the ecosystem?

They depend on sunlight for warmth, and water for drinking.

Project 4.4.3 Ecosystem WebQuest

Introduction

The diversity of plants and animals in the United States is extensive. There are many variations in ecosystems as you travel across the United States. During this WebQuest, you will explore how living organisms and the natural environment work together in one ecosystem.

Your teacher will assign you and your group one of the following ecosystems. Depending on the ecosystem, you and your group may choose to narrow the ecosystem into a more specific category.

Aquatic – freshwater
Desert

Coniferous forest
Grassland – prairie

Deciduous forest
Tropical forest

Task

Work with your group to investigate the ecosystem assigned by your teacher. Research the characteristics of the assigned ecosystem and develop a three-dimensional model of the ecosystem with an informational display explaining each component and how the plants and animals rely on each other. Keep a record of the references you use during your research.

Process

Within your group, review the criteria you need to complete. Develop group goals and assign individual tasks in order to complete the project in a timely fashion.

Part One – Research

Use the internet and classroom texts to research the following information about your ecosystem.

- Major biome in which the ecosystem fits
- Characteristics used to identify the ecosystem
 - o Climate
 - o Land features
- Location(s) of ecosystem in the United States
- Flora
- Fauna
- Natural resources
- Interactions of plants and animals (food web)
- Human influence and interactions

Keep a log of each source you use. When you have completed your research, write a works cited for your project using APA formatting. You should use a minimum of three sources of information, of which at least one is a text.

Part Two – Preparing Your Display

Use the tri-fold display board to prepare an educational display exhibiting the information listed in Part One. On the 20"x30" foam board, use the supplies provided and materials you gather from home to build a three-dimensional model of your ecosystem. Use *Project 4.4.3 Evaluation Rubric* to self-assess your display. Making any changes before sharing it with your classmates

Part Three – Sharing Information

Display your project as instructed by your teacher for *Activity 4.4.4 Walk Across the Country*.

Resources

Use the following web resources to assist you during your research. You may find additional books, magazines, videos, and websites helpful in your studies as well.

Biomes and Ecosystems

<http://www.windows.ucar.edu/tour/link=/earth/ecosystems.html&portal=voca>

Blue Planet Biomes http://www.blueplanetbiomes.org/world_biomes.htm

Descriptions of the Ecoregions of the United States

<http://www.fs.fed.us/land/ecosysmgmt/index.html>

Earth Observatory <http://earthobservatory.nasa.gov/Experiments/Biome/>

Enchanted Learning Biomes and Habitats <http://www.enchantedlearning.com/biomes/>

worldbiomes.com http://www.worldbiomes.com/biomes_grassland.htm

The World's Biomes <http://www.ucmp.berkeley.edu/glossary/gloss5/biome/index.html>

Evaluation

Refer to *Project 4.4.3 Evaluation Rubric* for evaluation and assessment criteria.