

Chapter 44 Project

Fellowship of the Ecosystem

Project Goal + Timeline

In this project, you will think like an ecologist to analyze and classify mythological or fantastical ecosystems from books, films, or television. You will consider the abiotic and biotic factors of each ecosystem as presented in the source material and then apply your knowledge to classify the ecosystems. Based on your classification, you'll identify inconsistencies in the ways the ecosystems are presented in the source material. Finally, you will prepare a brief (10- to 15-minute) presentation showcasing your analysis of the ecosystems. This project should be completed with a partner and should take between four and eight hours to complete.

Directions

Understanding the dynamics by which the biosphere and environment change is critical to the health of our species and many others. These dynamics are understood through the study of ecology. By stretching ecological concepts into the realm of fantasy, you can gain a better appreciation of both their utility and limitations.

Your task is to think like an ecologist to analyze, classify, and make predictions about ecosystems from works of fantasy, science fiction, or mythology. Work with your partner to select your source material and specific ecosystems to analyze. You may select any fantasy, mythological, or science fiction environment that is described in sufficient detail. The ecosystems could come from a book, movie, or television show. Try to identify at least two ecosystems from the same source material to analyze and compare.

Once you've selected your ecosystems, it's time to study them. Read or watch your source material and record all distinguishing features of the ecosystems, including their abiotic factors, climates, vegetation, and animals. Complete Table 1 with the features of each ecosystem you've selected.

TABLE 1: Features of Selected Ecosystems

	Ecosystem 1:	Ecosystem 2:
Abiotic factors		
Vegetation		
Animals		
Climate		
Any other distinguishing characteristics		

Continue your analysis by completing the following questions.

1. Based on the characteristics you described in Table 1, identify the biome to which each ecosystem is most similar. Explain your reasoning.

2. For each ecosystem, describe the key factors that limit what type of organisms can live there. For example, is the temperature extreme? Is water limited?
3. Based on your classification in Question 1 and key factors identified in Question 2, what additional characteristics can you infer about these ecosystems that are not explicitly stated in the source material?
4. Based on the climate and characteristics of each ecosystem, what other ecosystems would you predict to be found nearby?
5. Consider how each ecosystem is depicted in its source material. Based on your classification and analysis of the ecosystem, are there any factors that seem out of place, either in the ecosystem or its surrounding region?
6. Are there any ways in which the standard definitions of biomes are not applicable to the ecosystems that you've selected?
7. Are there any threats to the ecosystems in your source material (for example, hunting, pollution, or wildfires)? How are these threats likely to impact the ecosystems?

Now that you have analyzed your ecosystems, work with your partner to prepare a digital presentation to showcase your fantasy ecosystems in detail. Your presentation should highlight and expand on the findings of your analysis. The following are some additional questions to consider:

- What types of organisms would you expect to find in each ecosystem? What types of interactions (e.g., mutualism, predation) would you expect to take place between or among these organisms?
- Based on the ecology of the area, are any of the mythical creatures or characters out of place?
- Consider the other ecosystems you'd expect to be found in regions surrounding the ecosystems you chose. Does that match the story? Why or why not?
- How certain are you in your analysis of the ecosystem? Is there any additional information you need to know to make a definite categorization of the ecosystem and its surrounding region?

Your presentation should also include images that compare the mythological ecosystems to the biomes to which they are most similar. Make sure to begin your presentation by providing some brief information about the story to provide context for the ecosystems you've chosen.

Project Materials

- Project worksheet and a pen
- Access to media, such as a book, movie, or television show
- Computer with internet access
- Presentation software, such as Microsoft PowerPoint

Student Checklist

- ☐ Complete Table 1
- ☐ Complete all questions
- ☐ Complete presentation