

AP Environmental Science

Biomes Mini-Project

Background: In studying environmental science, we will look at a variety of different factors, both biotic and abiotic, which influence living organisms and the biomes in which they live. There are about eight general biome types- tropical rain forest, desert, coniferous forest, temperate deciduous forest, tundra, chaparral, grasslands, and aquatic (both oceanic and freshwater). However, these basic biome categories are simply generalizations, under which, there are many more specific biomes with unique features localized to particular geographic regions. The two dominant factors that predict biome types are *precipitation* and *temperature*, both of which are associated with the general climate of an area, which is primarily dictated geographic latitude.

Directions: In this activity *you may work alone or with a partner, but absolutely no more than two people may work together. If you decide to work with a partner, both partners will receive the same grade* so choose your partner wisely, or simply work on your own. In this project, you will be responsible for constructing a PowerPoint presentation of seven to ten slides; *including a bibliographic slide*. Your presentations will also be presented to the class via a brief oral presentation.

For the PowerPoint, you will be assigned a particular biome. You should focus on a particular region of your biome...be specific. For example, if you have been assigned the tropical rainforest, you could pick the tropical rainforest of Queensland Australia, tropical rainforest of Guatemala, or tropical rainforests of the Thai peninsula.

Your slides must follow the format listed below, with specific content on the appropriate slides.

Slide 1- List your biome of study; provide a small map of the area, basic latitude and/or longitude boundaries, and names of regions or country examples within your biome area.

Slide 2&3 - Research and describe the basic abiotic factors of your particular biome. This would include factors such as average precipitation, average temperature, wind patterns, soil composition or profile, dominate geographic features, solar radiation, or limiting factors.

Slide 4 - Research and find a climatogram very similar to your region, or make a basic climatogram by making a simple graph from any data you find in your research. Explain any seasonal patterns or general trends of your climatograms, and the special influence these localized conditions have on the adaptations of key plant and animal species of that area.

Slide 5&6 - List at least five major autotrophs, 5 major heterotrophs, and 5 decomposers or scavengers found in your biome area. Also, be sure to list any keystone species or species that have a particularly important cultural, economic or ecological value. This slide may also include any threatened or endangered species.

Slide 7&8 - Describe the state of the particular biome area you are researching in terms of its preservation, degradation, or environmental status in general. Is it an area with deforestation problems? Are there national parks or nature preserves in the region? Are there specific dangers for the region that likely to be seen in the future? Are there any current environmental problems that are problematic for the region today?

Slide 9 - Research and list any programs or groups that are taking a proactive role in helping to preserve the biotic or abiotic resources of your biome of study. These programs or groups may be very localized grassroots efforts, volunteer groups, privately funded preservation groups, or even government backed programs.

Slide 10 - Bibliography slide! When in doubt document your sources. Provide credit where credit is due.