

Environmental Science Lesson Plan Overview

Below are materials for a unit that was implemented with college students on Pyric Herbivory.

Note: Overall, students each need a personal laptop for most lessons to access links and conduct research. Depending on the mode of assignment submission, a writing utensil and paper may also be necessary.

Lesson 1: Conceptions of Fire

Students discuss their perceptions of fire before and after viewing a video and a set of wildfire photos. Then, they read an [article](#).

Lesson 2: Grassland Ecosystem Structure

Students visit an African Grasslands exhibit. Using the plants and animals they see, they create a food web and a trophic pyramid.

In lieu of visiting a science exhibit, students can reference these articles about [plants](#) and [animals](#) in the African Savanna. They will need a personal laptop to access these articles.

Lesson 3: Grazers vs. Browsers

Students read an article and a textbook passage. Then, they adjust their trophic pyramids from lesson 2. They also create a list of vocabulary terms and definitions.

Students can use [this article](#) about grazers vs browsers. In lieu of the textbook passage, they can read [this article](#) about the rule of 10.

Lesson 4: Meristem and Nutrient Cycling

Students discuss fire in/tolerant plants. They visit a trail and collect samples. They also complete a soil minilab.

One digital microscope per four students is recommended for the field portion. Three sandwich bags or small plastic containers are needed for each student (or each lab group) to collect soil samples. Access to a partially burned grassland area is required for this lesson.

Lesson 5: Effects of Fire on Grasslands

Students read a [meristem article](#) and label a [diagram](#). Then, they watch a [video](#) and note the effects of a burn on soil nutrients.

Lesson 6: Global Grassland Biomes and Fire Maintenance

Students research fires in two continents and make predictions about the subsequent ecosystem recoveries.

Students may start with [this article](#) to complete the research assignment.

Evaluation: Students are given a case study and make predictions through several aspects listed on the lesson cycle document.