

AP Environmental Science Summer Assignment 2023

Maryvale Preparatory

Welcome to Advanced Placement Environmental Science (a.k.a APES)! I am so excited that you've signed up for this class and I look forward to getting to know you next school year. Environmental science is interdisciplinary science; it embraces a wide variety of topics from different areas of study.

This Summer Assignment is designed to introduce you to some of the big ideas you will learn about in this class, including an introduction to the study of environmental science and sustainability.

Summer Assignment

****Due on the first day of class.****

- Part 1 - Learn about learning
- Part 2- Explore the Big Ideas
- Part 3 - Take a Field Trip
- Part 4 - Do the Math
- Part 5 - Read and Learn

Part 1 - Learn about Learning

We are going to learn A LOT this year! It is super important to know how your mind works and learns in order to learn new skills and information in school and life. Watch the video [How to Study: MAKE IT STICK](#). This video summarizes 3 learning techniques: 1) Self-quizzing, 2) Interleaving, and 3) Spacing. Watch the video, then write a half page response about how you want to apply one of these learning strategies to next year in Environmental Science, another class, sport, extracurricular, etc. [Summary of key points from video](#).

Once OnCampus is up and running for next year, **submit your typed response** to the *Learn about Learning* assignment.

Part 2 - Explore the Big Ideas

Environmental science is very interdisciplinary, weaving together the study of biology, chemistry, energy, society, and human behavior. Within these varied topics, four big ideas provide a unifying framework for the study of environmental science: 1) energy transfer, 2) interactions between earth systems, 3) interactions between different species and the environment, and 4) sustainability.

BIG IDEA 1: Energy Transfer

Energy conversions underlie all ecological processes. Energy cannot be created; it must come from somewhere. As energy flows through systems, at each step, more of it becomes unusable.

BIG IDEA 2: Interactions between Systems

The Earth is one interconnected system. Natural systems change over time and space.

Biogeochemical systems vary in ability to recover from disturbances.

BIG IDEA 3: Interactions between Different Species and the Environment

Humans alter natural systems and have had an impact on the environment for millions of years.

Technology and population growth have enabled humans to increase both the rate and scale of their impact on the environment.

BIG IDEA 4: Sustainability

Human survival depends on developing practices that will achieve sustainable systems. A suitable combination of conservation and development is required. The management of resources is essential. Understanding the role of cultural, social, and economic factors is vital to the development of solutions.

Assignment

Choose an article from a reputable news source (*NYT*, *Washington Post*, *The Guardian*, etc.) that is about a current environmental issue. In one paragraph, summarize the main findings/argument/information in the article. In a second paragraph, explain how the article connects to one of the 4 big ideas described above.

Submit your typed summary and analysis to the *Big Ideas Summer Assignment* on OnCampus. Cite your source(s) in APA format, and if possible, include a link to the original article. Be prepared to share a brief summary of the article and its connection to a Big Idea in environmental science in a small group/partner conversation.

The Maryvale Library has a guest subscription to the New York Times. Follow [this link to access](#), then sign in using your@**maryvale.com** email address.

Part 3 - Take a Field Trip

Plan a field trip for yourself! You can explore a familiar place (backyard, family farm, favorite park, regular vacation spot) or somewhere new locally or on your travels this summer. The place can be rural or urban, forested, grassy, or beachy. Find a place outside to sit for at least 45 minutes straight without your phone or computer. Document your experience in some way, such as:

- a written reflection about the experience/your observations
- a nature journal page cataloging your observations
- a sketch of the ecosystem “scene” or organisms you observed
- anything else that captures your observations/impressions/thoughts

*Please note that this does not need to be super “polished”. The goal is to have some uninterrupted time in nature just being still and observing the world around you. Bring your handwritten notes/drawings/etc with you to class on the first day and be prepared to share with a partner or small group.

Part 4- Do the Math

Please complete the [math pretest](#) included with this assignment. Read the directions carefully. Treat this like it is a real test. It is very important that you do your own best work without any outside help so that you and I have an accurate understanding of your math knowledge coming into the year. This is not graded for accuracy and it is okay if you don't know how to solve every question.

Part 5 - Read and Learn

APES is the equivalent of a college-level class. In college, you HAVE to complete reading assignments in your textbook. Even if you have been able to excel in classes without reading textbooks, college is different. There is simply too much content and you must come into class having read about the topics for that day's lesson in advance.

Science textbooks are heavy, thick, and can seem overwhelming. It is important that you learn how to spread out the reading, chunking it into smaller pieces over time. Be prepared to read and take notes on at least 20 textbook pages per week. Watch this video about [Reading Strategies for College Textbook Assignments](#) for some prop tips on managing reading assignments.

In college, there is a well-established formula for estimating how much out of class prep (reading, homework) you should plan on. Take the credit hour amount and multiply it by 3 to get an estimate of preparation time per week. For this class that would be 4 credit hours X 3 = 12 hours. Since this class is spread over two semesters, divide by 2. So, you should be planning to spend **about 6 hours per week on reading** and homework for this class.

Reading Assignment #1

Textbook

Friedland, Andrew and Rick Relyea. Environmental Science for the AP® Course. 4th ed., New York, NY: Bedford, Freeman, and Worth, 2023. (The one with the coyote on the cover.)

Reading the following sections:

- [Module 0](#) - pages 2-15 What is Environmental Science?
- [Module 32](#) - pages 361-368 Introduction to Sustainability
- [Module 24](#) - pages 292-299 The Tragedy of the Commons (Stop at "Land Management")
- [Module 56](#)- pages 667-674 The Greenhouse Effect

Take notes using the Notes Sheets (included) as you read. All notes must be handwritten. We will go over math problems in class. Notes are graded for completion. It is important that you put in time and effort to read carefully and take meaningful notes. Learning new material requires active engagement in your own learning process. Trying to cut corners or copy notes from a friend will impede your learning (copying notes is also against our Honor Code.) Remember the prep time equation; **you should expect to spend about 6 hours reading these 34 pages and taking notes.**

[Notes- What is Environmental Science](#)

[Notes- Introduction to Sustainability & Tragedy of the Common](#)

[Notes- The Greenhouse Effect](#)