



UNIVERSITY HIGH SCHOOL

A Nationally Recognized Exemplary School

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May 31, 2022

Welcome 2022-2023 AP Environmental Science Students!

This course is designed to be the equivalent of an Environmental Science course taken during the first year of college. AP Environmental Science is a *full year college level laboratory course*. Students will examine environmental issues from an economic, scientific, sociological and historical point of view. The goal of this course is to provide students with the scientific principles, concepts and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them.

The book that we will be using is:

Title: **Environmental Science for AP ***

Authors: Andrew Friedland et. al

ISBN: 9780716738497 or 071673849X

Please check out the textbook prior to the summer break so that you can complete the summer assignment. Books will be available to check out from the library through the last week of school. Alternatively, you may wish to purchase your own copy of the textbook. Advantages to purchasing your own copy of the text include: the ability to highlight the text as you actively read, annotating the figures, and retaining the text as a reference for college. The assignment you will be responsible for this summer is listed below. The first few weeks of school will be devoted to building on what you learned in your summer reading. You may contact me during the summer at JenniferBartlau@iusd.org if you have any questions.

Summer Assignment: You can find the link to the summer assignment on the UNI homepage. The assignment below will be due on Canvas at the beginning of the school year.

1. Read/study Chapter 1: Studying the State of Our Earth and ***hand write*** an outline/notes. Your outline/notes should be thorough and may include images, definitions, concept maps, questions/thoughts about the text and/or answers to the concept check questions found in the textbook.
2. Read one current event and then complete one current event summary and analysis. (Google Doc)
3. Go on a scavenger hunt to explore important environmental science topics and create a document to share with the class first full week of school. This should be fun! (Google Slides)

I am looking forward to a great year! Enjoy your summer.

Sincerely,

Ms. Jennifer Bartlau
AP Environmental Science Instructor

Part Two: Current Events Digital Tables and Presentation

Introduction

AP Environmental Science is a fantastic course for increasing science literacy with regards to the media. An environmental issue is referenced up to 20 times in every edition of every newspaper every day in the United States and these stats are similar on the international scale. Environmental issues are multifaceted and relate to all aspects of each of our lives. Many issues may not touch our lives personally, but are noteworthy human issues such as social crisis or worldwide epidemics. The articles you choose for this assignment must have a clear connection to Environmental Science. You can preview the chapters in the text to get an idea of appropriate topics, or email me.

Current events will be ongoing throughout the year, so you will receive further instructions at the beginning of the year. For now, what you need to do is complete the following table for one current event related to environmental science. Your current event **MUST BE PUBLISHED AFTER JUNE 3, 2022**. This assignment will not be given credit if the current event is from a date prior to that. Your initial introduction to the course content will be Chapter 1 of the textbook so refer to the chapter to connect your current event to the course content.

Articles should be from sources that are science oriented or reputable such as Scientific American, Nature, Discover, and Science. Other appropriate sources include: The New York Times, Washington Post, LA Times, NPR, The Atlantic, Slate, Time, Newsweek, Orion Magazine, The Economist, The Wall Street Journal and National Geographic. Please do not choose an article from ScienceDaily.

You can either recreate the table shown below, below or you can go to this link and make a copy of the document: <https://bit.ly/APESCurrentEventSummer2022>.

APES Current Events Summary Table - The summary table below should be done using complete sentences. This table is to help you make sure to hit all the important points so you can write paragraphs in each part of the table or you can use bullet points depending on what makes sense to you. This information should be about one to two pages in length. You will complete this assignment in a Google Doc.

Include bibliographic information including 1. title, 2. date 3. author 4. source 5. url link to article	
Include a clear, thorough summary about the content of the article. Be sure to identify the 'Ws' (the Who, What, Where, When, and Why).	
Discuss the environmental/scientific, economic, and social/political implications of the article. These are the 3Ps - People, Planet, Profit!	All three must be addressed: environmental, economic, and social. You can label each.
Identify the stakeholders in the article and describe how each is affected by the issue. This includes humans and other organisms.	Stakeholder: a person or place with an interest in a particular place or issue.
Identify and Explain the content in chapters studied thus far (for summer this will be chapter one and chapter twenty) that this article relates to. Include and highlight as many vocabulary words as possible. For each item/term explain HOW the article relates. This can be a bulleted list of sentences. Or, you may write a paragraph and highlight your chosen relevant terms.	
Describe how you chose this article... What process did you use in your search?	
Identify Who is behind the information? Use this space to research the author and the publication. What does the background of the author and publication tell you about the information you read about? Try to answer the following: Where is their funding from? What is their mission or perspective? What might their motivations be for presenting this information? (Provide sources for the information you share here in the form of links)	

<p>Present your take on the issue. How does it apply to your life? Do you think it should be resolved in some way? Whatever perspective you present on the topic, provide reasons/evidence that support your perspective. Use at least one of the given sentence starters to help you relate the issue to your life and then say a little more about the topic from your personal perspective. Your response should be about <u>one paragraph</u> in length.</p>	<p><i>This issue relates directly to my life because...</i> <i>This issue relates indirectly to my life because...</i> <i>I believe that...</i> <i>This issue should.... because...</i></p>
<p>Include an image for each article that you think represents the article, the issue, or your stance and caption the image so that it is clear why you chose the image.</p>	
<p>Copy of the Article (not just the url)</p>	

Part Three: Summer Scavenger Hunt

Make a Google Slideshow to share what you did/saw this summer related to environmental science. This should be fun! The purpose is for you to start engaging with the content over the summer to better prepare you for the school year. Environmental science is all around you; this project should help you become aware of the fact.

On each slide, be sure to include the following:

1. Label the slide as the category being displayed. (Lithosphere, Species Interactions, Forest, etc....)
2. Photo of the item with you in it. (Selfie?)
3. Photo caption naming the specific object. (Igneous Rock, Mutualism, Native Tree, etc....)
4. An explanation as to why you chose the item. How does it relate to environmental science or your current ideas regarding environmental science?
5. Date photo was taken.
6. Location – be specific. (Irvine, California or Arches National Park, Utah)

Choose twenty items from the following list and make a slide for each item you choose. Your slide show will have 21 slides, one slide per item and one cover slide (name, date, and period). Be prepared to show your finished product with the class.

#	Category/Identification	Ideas/Criteria/Guidelines	Also Include
1	Lithosphere (Plate Tectonics/Rock)	Igneous rock, sedimentary rock, metamorphic rock, non-native rock, plate tectonics.	Name of Rock/Type of Plate Boundary
2	Lithosphere (Soil)	Soil Formation and Erosion, Soil Composition and Properties.	Description of Soil
3	Hydrosphere	Ocean, bay, flowing or standing water, watershed, wetland...	Name of water body
4	Atmosphere	Clouds, smog, fog, etc.	Name of cloud type or smog type
5	Biogeochemical Cycles	Nitrogen, Carbon, Water, Phosphorus	Where the element is, has come from and is going.
6	Energy Flow	Carnivore consuming, Herbivore consuming, photosynthesis happening	Names of participating species.
7	Biodiversity	Native threatened or endangered animal in its habitat. Non-native animal in its habitat.	Name of species.
8	Biodiversity	Non-native plant or animal in its habitat. Invasive Species.	Name of species.
9	Species Interactions	Mutualism between two plants, two animals or between a plant and animal. Show an example of two species cooperating.	Name of each species and how each species benefits.
10	Species Interactions	Competition, Parasitism, Predation	Name of each species and how they impact each other.

11	Population Growth	A human less than 1 year old. A human less than 2 years old. A human less than five years old. A human over 78 years old.	Name of the human and a photo caption.
12	Forest	Native tree you can't reach more than one quarter of the way around. Native tree you cannot reach more than halfway around. Non-native tree you cannot reach more than half way around.	Name of species.
13	Forest	Image of a forest that is managed. Clear cut or selective logging. Can also be a tree farm or orchard.	Name of Forest/Tree Farm/Harvest Method
14	Biodiversity Preserve	National park system unit. State park system unit. County or city park system unit.	Name of Park
15	Food Crops	Food crop being grown on a farm. Food crop being grown in a garden. Food crop being processed or retailed.	Name of food crop.
16	Agriculture Practice	Pesticides being applied, fertilizer being applied, impact of agricultural practice. Topics include: monoculture, fertilization, mechanization, use of pesticides, IPM, till, noTill, GMO, crop rotation, organic, intercropping, biodynamic.	Name of agricultural practice observed.
17	Meat	Animals being raised for food in a farm or CAFO. Animals being raised for food in a household. Meat being retailed. Animals at a ranch.	Name of animal.
18	Fishing	Commercial fishing operation. Recreational fishing. Fresh fish being retailed.	Name of fish.
19	Water Resources	Agricultural irrigation system. Man-made dam. Man-made reservoir.	How the water you observed is being used.
20	Water Pollution	Wastewater treatment facility. Source of water pollution. Polluted water or solid water pollutant. Can be pathogens, oxygen demanding waste, plant nutrients, organic or inorganic chemicals, sediments, or heavy metals.	Type of water pollution observed.
21	Air Pollution	Stationary, point source emitting pollution. Mobile source emitting pollution. Air pollution without identified source.	Type of air pollution. As specific as possible.
22	Light Pollution or Noise Pollution	Light pollution and/or noise pollution.	Type of pollution and its cause and effect.
23	Renewable Energy	Renewable power generation plant (solar, wind, geothermal...) Renewable residential or commercial generator. Renewably powered appliance.	Type of renewable energy.
24	Electricity	Electricity generation. Power plant, transformer, transmission lines, distribution lines.	Step of electricity generation documented.
25	Water Resources	Water transport system. Water storage system. Water delivery and use.	Where water comes from and where it goes.
26	Fossil Fuels	Fossil fuel production or processing (mine, well, refinery...). Non-gasoline fossil fuel use or retail. Gasoline retail.	Name of fossil fuel.
27	Solid Waste	REDUCING waste generation (instead of reusing, recycling or discarding). REUSING potential waste (instead of recycling or discarding). RECYCLING waste (instead of discarding). COMPOSTING.	Potential waste that is being averted.

28	Urbanization	LEED platinum or gold building. LEED silver or certified building. Other "green" buildings. Example of a building with passive solar design or other form of sustainable design.	Name of or occupants of building. Description of "green" features.
29	Urbanization	New development previously natural habitat. New development on previously rural land. New development on previously urban land. Urban sprawl or urban blight can be used here.	What was the land used for before? What will the land be used for in the future?
30	Transportation	Riding public mass transit. Public mass transit. Private mass transit. Walking. Bicycling.	Destination and ride commentary.
31	Politics and Economics	University building, from which the environment is studied. Community college building from which the environment is studied. Commercial or public building from which the environment is worked with.	Name of someone who works there, and hopefully a quote from him or her about the environment.
32	Politics and Economics	Worker in an environment-related profession. Volunteer in environment related work. Environmental aware person.	Name and environmental role of person and a quote from the person.
33	Beauty	A non-human "thing" in the environment that you find extraordinarily beautiful.	What it is and why it is beautiful?
34	Anthropogenic	Take a picture of something man made.	Comment on the impact of the use of your chosen object on the environment.
35	Choice/Other.	Anything relevant to the environment. You can do up to 3 of these based on prior knowledge or information you learn from the textbook or other sources. This can even be a different example for the same criteria.	Relate what you take a picture of to environmental science.

CREDIT

1. Full credit is the expectation. Follow all guidelines, and full credit is easy to achieve.
2. Clarity and quality of imagery is important.
3. Accuracy and thoroughness of documentation are important.
4. Creativity and entertainment value are way better than no creativity or entertainment value; they can compensate for minor deficiencies, but not for major deficiencies.
5. Evidence of trespassing, obstruction of traffic, violation of laws, jeopardizing safety or compromising integrity will cost credit. Photoshopping or other image manipulation to gain advantage constitutes an absolute abandonment of integrity.

SUGGESTIONS

Have fun with it; it's not supposed to be "work."

Build it gradually throughout the summer. Saving it all for the last day would make it "work".

If you have no imaging device, you can borrow one from a friend or family member.

Please email and let me at the beginning of the summer if you do not have access to a camera.

See Examples on the Following Page

SAMPLE SLIDE (From 2021)



Biodiversity

Monarch Butterfly
Corona del Mar, California
July 12, 2021

I love seeing monarch butterflies! I take walks most days and whenever I see a monarch butterfly I pretty much stop and watch him or her fly. This summer I noticed that most of the butterflies were solitary rather than traveling in groups. This particular butterfly was still enough that I was able to take a picture with the butterfly in the background. This relates to environmental science because monarch butterflies are part of biodiversity and also because monarch butterflies are threatened by pesticides, climate change and habitat loss. They are not federally designated as endangered species but it is widely known that the monarch population is in decline. What is so amazing about monarch butterflies is their 2,500 mile migration, traveling 50 miles per day! (info from FWS and WWF websites).

SAMPLE SLIDE (From 2018)

Food Crops

Food crop being grown on a farm.
U-pick blueberries.

Endicott Farms in Mounds, Oklahoma.
June 14, 2018

In June I went to Oklahoma to visit my sister and her family. One afternoon, my sister Kathryn, my nephew William and I drove 20 miles to go to Endicott Farms and pick blueberries. We also got to pick blackberries, but I don't have a picture of those. I chose this picture because I wanted to give an example of food crops that were not being retailed in a grocery store. As our agricultural system has become more industrialized many of us are no longer in touch with how are food is grown, where it is grown, and often, we don't know what it looks like when it is growing. There is an entire chapter (Chapter 11) in APES on food and agriculture.

