

LITTLETON
PUBLIC SCHOOLS



Heritage High School
1401 West Geddes Avenue
Littleton, Colorado 80120
303-347-7600

May 2016

Hi,

Welcome to AP Environmental Science (APES)!

Your summer assignment is to read the first two chapters of your APES book using the attached reading guide. Not finishing these assignments is not an acceptable excuse to drop the course, so start early and start off the year right!

These chapter readings are due the first day that you return to school.

You can buy the book from anywhere online. HOWEVER, if you do not buy the book from the publisher, you will not have access to the online book or the online quizzes. The online access is sent to me here at school once you buy the book. If you are not able to buy the book for any reason, please contact me and we can see what we can work out.

What you need to do now:

1. Send me an email confirming that you are in the class from your school email account.
2. Get the book, "Environment, The Science Behind the Stories" by Withgott et al. FIFTH EDITION

- Preferred option: Use the attached instructions to buy the book and online access from the publisher using pearsonprivateschools.com for \$141.

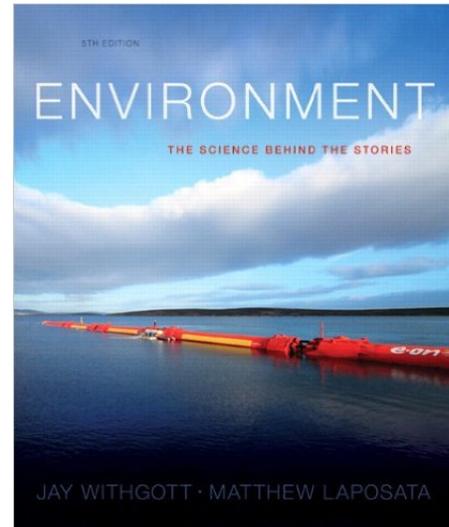
-Option Two: Buy a used book without the online book and associated materials for around \$70.

What you need to do soon:

3. Start your summer reading. Please do not wait until the night before the assignment is due to start reading the book. I cannot retain that much information in one night and I imagine that you cannot either. Don't waste your time; spread out your reading.

I am looking forward to working with you,

Geoffrey Brinker
gbrinker@lps.k12.co.us



How to Buy the Book

1. Go to www.pearsonprivateschools.com
2. Enter the school's zip code: 80120
3. Click on Heritage High School
4. Do an ISBN or Title Search for: "Environment: The Science Behind the Stories," 5th edition by Withgott et al. © 2015 ISBN: 0133540146
5. Buy one for \$141.32 using Guest Checkout but read the following first:
6. SUPER IMPORTANT FOR ONLINE ACCESS: The codes for the online book and website are not sent to you, but to me. If you do not affiliate with HHS, I will not get a code and you will not get online access.
 - a. After entering your billing and shipping info for your home, scroll to the bottom of the page and
 - b. Click YES for school affiliation.
 - c. Enter CO and 80120
 - d. Click on Heritage High School
 - e. Uncheck the products and special offers box if you choose to not get Pearson spam.
7. Get the book on your doorstep and start reading right away!
8. Send me your Pearson Receipt Order # so I can send you the passcodes once I get them.

Please email me if you have any questions.

HHS AP Environmental Science
Chapter 1: An Introduction to Environmental Science
Framed Vocabulary and Notes

To keep in mind for all chapters:

1. Incorporate case studies and current events somehow...

Case studies are the tools that you will use to be successful on class as well as AP Exams.

Environmental science is based on the world around us and you **MUST** have examples and data to back up your technical knowledge.

2. Use the following six overall Themes in Environmental Science as an organizational framework:

1. Human population growth is a major contributor to environmental problems.
2. Sustainability: unsustainable use/consumption of resources must be transformed into sustainable use
3. A global perspective to solving environmental issues. Environmentalism is not right or left. It is our and our kids' future. Local decisions have global impacts.
4. Dealing with the consequences of urbanization and industrial development.
5. Interconnections of People and Nature: Change in one leads to change in the other.
6. Incorporating values into our scientific decisions.

3. Efficient and organized systems for collecting and organizing information is paramount.

Part of an AP class is learning how to efficiently and effectively extract information from a text. I will model one possible set up for you in this chapter, but soon you will have to create or choose an organized system that works for you.

4. Pacing is imperative

If a person does not pace oneself and do a little every day, then s/he will be unsuccessful in retaining the information. Make a goal of reading eight to ten pages a night from the book and/or answering 8-10 questions.

So, on we go to this specific assignment.

Studying Model One: Vocabulary and Concept Question Columns

For the first column: Using not the glossary, but rather the text, write a definition for the vocabulary words listed. Remember, a definition often includes what something is as well as what it does. It can also include examples, connections to other concepts, or its importance to environmental science.

*The point that I am trying to make is this: It is not enough to just copy down the definition from the glossary or web; you need to understand both what it means as well as its connection to the rest of the material.

For the second column: Use the text to answer the following questions. In future assignments, if questions are not provided, one approach would be to take notes on each section listed and then generate a question. Well-formed and thoughtful questions may then be used on the unit tests.

For the third column: As you are reading, put stars next to the figures and examples that you believe are quite important. Then make a list of the important figures and examples along with a description of what they show. Figures are important because they provide a great summary of important concepts as one begins to review for a test. In this case, I have underlined the important figures to give you an idea of what important.

| Vocabulary Terms | Concept Questions and Notes | Important Figures and what they show |
|---|---|---|
| <p>* Particularly important</p> <ul style="list-style-type: none"> ● Environment ● environmental science ● natural resources ● * renewable natural resources (include examples) ● * nonrenewable natural resources (include examples) ● *Ecosystem services ● industrial revolution ● agricultural revolution ● * fossil fuels ● Garrett Hardin and the Tragedy of the Commons ● ecological footprint ● *overshoot ● interdisciplinary ● natural sciences ● social sciences ● environmental studies ● environmentalism ● *Manipulative Experiment (and its difference from a...) ● *Natural Experiment ● Science ● * ecology ● peer review ● theory ● paradigm ● biodiversity ● sustainable ● *sustainability ● Natural capital ● Biodiversity ● Millenium Ecosystem Assessment ● Cornucopian ● Cassandras ● *sustainable development ● triple bottom line ● biotic ● abiotic | <ol style="list-style-type: none"> 1. Figure 1.6 If you were entering into the field of Environmental Science, which of the disciplines listed would be the route you would choose into the field? 2. What is a null hypothesis? How does it work? Why is the scientific method based upon null hypotheses? 3. In 2010, President Obama shifted the course of NASA to a more environmental focus. What did he do and why did he do it? 4. What is “peak oil production”? Why is there so much debate on when it will occur? 5. What is the Millennium Ecosystem Assessment? Summarize its findings. 6. Who are the cassandras and cornacopians? What are three things that one must consider when faced with arguments from both of these sides? 7. What is one paradigm (environmental or not) that you apply to your daily life? | <p>Figure 1.1 Figure 1.2 Figure 1.4 Figure 1.5 Case study pg.6-7 Figure 1.12 Figure 1.14 Figure 1.15</p> |

HHS AP Environmental Science
Chapter 2: Earth's Physical Systems: Matter, Energy, and Geology
Framed Vocabulary and Notes

To keep in mind for all chapters:

1. Incorporate case studies and current events somehow...

2. Use the six overall Themes in Environmental Science as an organizational framework:

3. Efficient and organized systems for collecting and organizing information is paramount.

Part of an AP class is learning how to efficiently and effectively extract information from a text. I will model one possible set up for you in this chapter, but soon you will have to create or choose an organized system that works for you.

4. Pacing is imperative

If a person does not pace oneself and do a little every day, then s/he will be unsuccessful in retaining the information. Make a goal of reading eight to ten pages a night from the book and/or answering 8-10 questions.

So, on we go to this specific assignment.

Studying Model Two: Vocabulary and Sticky Note Summaries

For the first column: Using the glossary, text, and other sources, writes a definition for the vocabulary words listed. Remember, a definition often includes what something is as well as what it does. It can also include examples, connections to other concepts, or its importance to environmental science. You may make flash cards for this section.

*The point that I am trying to make is this: It is not enough to just copy down the definition from the glossary or web; you need to understand both what it means as well as its connection to the rest of the material.

For the second column: Drawing out important information from the text is more involved than just writing down the bold words and looking them up in an online dictionary. Part of reading is learning to draw out important ideas from the text. For each section in red and in blue summarize the section in one short blurb on a sticky note. Stick it over the section as you read it. Then, go back and type each heading into a document with your summary transcribed below each.

For the third column: As you are reading, put stars next to the figures and examples that you believe are quite important. Then make a list of the important figures and examples along with a description of what they show. Figures are important because they provide a great summary of important concepts as one begins to review for a test. In this case, I have selected the important figures to give you an idea of what's important.

| Vocabulary Terms | Sticky Note summaries | Important Figures and what they show |
|--|--|---|
| <p>* Particularly important</p> <ul style="list-style-type: none"> • Geothermal Energy • Chemistry and its role in Environmental Science • Matter • *Law of Conservation of Matter • Carbon and its importance to life • Nitrogen and its importance to life • Hydrogen and its importance to life • Oxygen and its importance to life • Element • Basic elemental structure • Isotopes • Radioactive • Half life • Molecules • Compounds • Acidic • Basic • *pH • *Organic compounds • Inorganic compounds • *Hydrocarbons • *Methane • Natural gas • Polymers • Macromolecules • Proteins • Protein folding • Nucleic acids • Carbohydrates • Four types of lipids • *Plastics • *Energy • *Potential energy • *Kinetic energy • *Chemical energy • **First law of thermodynamics • Second law of thermodynamics • *Energy conversion efficiency • Autotrophs/primary producers • Heterotrophs/consumers • Photosynthesis (review) • Photosynthesis happens in more organisms than just plants • Chemosynthesis • Geology • *Mantle • *Lithosphere • *Crust • *Plate tectonics • Pangea • *Three types of plate boundaries <p>MORE ON THE BACK!</p> | <ol style="list-style-type: none"> 1. Do the sticky-note summaries note taking model as described above. <p>Additional questions to answer</p> <ol style="list-style-type: none"> 2. Explain the importance of water and why its atomic structure is so important to the existence of life. 3. What is one reason hazardous materials clean-up is so costly? 4. Discuss a few reasons why some people refuse to believe that isotope dating is an actual testing technique. | <p>Central case pg. 24 Figure 2.5 Figure 2.15 Figure 2.16 Figure 2.17 Figure 2.18 Figure 2.19 Box pg. 38-39 Figure 2.21 Figure 2.23 Box pg. 44-45</p> |

| | | |
|--|--|--|
| <ul style="list-style-type: none">• Subduction• Continental collision• Rock• Mineral• Rock cycle• Lava• Three types of rocks• Earthquake• *Interplate or volcanic hotspot• Landslide• Mass wasting• Tsunami | | |
|--|--|--|