

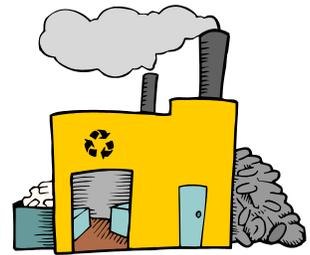


# ENVIRONMENTAL SCIENCE- AP

(APES)

Ms. Amy Klein Wesselman

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Welcome to APES! This class will look at many topics in Environmental Science. We will cover major environmental topics such as acid rain, biodiversity, and global warming, as well as, energy, the atmosphere, water, soil, human populations and waste. Because this course is AP Environmental SCIENCE, it will have a large laboratory and field investigation component. This allows students to learn about the environment through first hand observation. Many times we will be going off campus for our studies. A mandatory field trip permission form will be kept on file for each student. Parents should be aware that their student will be leaving campus periodically as part of the course. It is my hope that you will come out of the class with a better understanding and appreciation for the world around you.

## COLLEGE BOARD AP ENVIRONMENTAL SCIENCE COURSE DESCRIPTION:

The goal of the AP Environmental Science 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.

Environmental science is interdisciplinary; it embraces a wide variety of topics from different areas of study. Yet there are several major unifying constructs, or themes, that cut across the many topics included in the study of environmental science. The following themes provide a foundation for the structure of the AP Environmental Science course.

1. Science is a process.
  - Science is a method of learning more about the world.
  - Science constantly changes the way we understand the world.
2. 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.
3. The Earth itself is one interconnected system.
  - Natural systems change over time and space.
  - Biogeochemical systems vary in ability to recover from disturbances.
4. Humans alter natural systems.
  - Humans 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.
5. Environmental problems have a cultural and social context.
  - Understanding the role of cultural, social and economic factors is vital to the development of solutions.
6. Human survival depends on developing practices that will achieve sustainable systems.
  - A suitable combination of conservation and development is required.
  - Management of common resources is essential.

Complete course description available at:

[http://apcentral.collegeboard.com/apc/public/repository/ap07\\_envsci\\_coursedes.pdf](http://apcentral.collegeboard.com/apc/public/repository/ap07_envsci_coursedes.pdf)

**Course Outline:**

Topic	Duration
Terrestrial Ecology <ul style="list-style-type: none"><li>• Population dynamics</li><li>• Communities and niches</li><li>• Terrestrial biomes</li><li>• Energy flow and pyramids</li><li>• Biogeochemical cycles</li><li>• Energy concepts</li><li>• Biomagnification</li></ul>	3 weeks
Third Rock from the Sun <ul style="list-style-type: none"><li>• Geologic time scale</li><li>• Plate tectonics</li><li>• Earthquakes &amp; volcanoes</li><li>• Rock cycle</li></ul>	2 weeks
Aquatic Ecology <ul style="list-style-type: none"><li>• Eutrophication</li><li>• Freshwater biomes</li><li>• Surface and groundwater issues</li><li>• Conservation</li></ul>	2 weeks
Human Populations <ul style="list-style-type: none"><li>• Human population sizes &amp; distribution</li><li>• Distribution and fertility rates</li><li>• Growth rate and doubling times</li><li>• Demographic transitions</li><li>• Age structure diagrams</li><li>• Global Economics</li><li>• Urban development and transportation</li></ul>	4 weeks
Biodiversity <ul style="list-style-type: none"><li>• Species diversity</li><li>• Preservation, remediation, mitigation, restoration</li><li>• Habitat loss</li><li>• Exotic species</li><li>• Endangered and extinct species</li><li>• Deforestation</li><li>• Economic impacts and decisions</li><li>• Public and federal lands</li><li>• Relevant laws</li></ul>	2 weeks
Nonrenewable Resources and Energy <ul style="list-style-type: none"><li>• Energy forms, units and conversions</li><li>• History and global energy use</li></ul>	3 weeks

<ul style="list-style-type: none"> <li>• Mining</li> <li>• Fossil fuel resources and use</li> <li>• Nuclear energy</li> <li>• Renewable energy</li> <li>• Energy conservation</li> <li>• Economic impacts and decisions</li> </ul>	
<b>Soil</b> <ul style="list-style-type: none"> <li>• Formation and composition</li> <li>• Physical and chemical properties</li> <li>• Soil types</li> <li>• Erosion and other soil problems</li> <li>• Conservation</li> <li>• Forestry, agriculture and Rangeland</li> </ul>	2 weeks
<b>Water</b> <ul style="list-style-type: none"> <li>• Pollution</li> <li>• Sources, causes and effects</li> <li>• Surface and groundwater issues</li> <li>• Cultural Eutrophication</li> <li>• Water purification</li> <li>• Sewage treatment</li> <li>• Human health risks</li> <li>• Clean Water Act and other laws</li> </ul>	2 weeks
<b>Air</b> <ul style="list-style-type: none"> <li>• Air pollution</li> <li>• Smog</li> <li>• Acid deposition</li> <li>• Indoor air pollutants</li> <li>• Clean Air Act and other laws</li> <li>• Human health risks</li> <li>• Stratospheric ozone and ozone depletion</li> <li>• Global warming</li> <li>• Economic impacts</li> </ul>	2 $\frac{1}{2}$ weeks

**GRADES:**

Tests/Projects- (60%)

Quizzes- (15%)

Daily assignments/labs- (25%)

**TESTS:**

All tests in this class will be timed. This is to prepare you for the AP exam. Tests will be multiple choice and free response. It is my responsibility as an AP teacher to prepare the students for the AP exam. There will be a practice exam in May to help make sure you are ready for the exam. **AP EXAM DATE: Monday, May 5<sup>th</sup>, 2014**

**MATERIALS:**

- Binder
- Folder With Pockets
- Loose-leaf paper
- Pen/Pencil
- Access to a computer with Internet
- Text: Living in the Environment by Miller**

**Classroom Rules and Expectations:**

Because of the level of an AP course, it is expected that all students exhibit a high level of self-discipline and conduct. We will be moving at a rapid pace, which will demand your full attention. Your behavior is especially important during laboratory procedures. If this becomes a problem, the teacher will provide the necessary punishment, and if extreme, the student may be removed from the class.

**Classroom Rules:**

1. Follow instructions the first time they are given.
2. Keep your hands, feet, and objects to yourself.
3. Stay in your assigned seat unless you are given permission to get up.
4. Do not use vulgar or offensive language.
5. Be in your assigned seat with all materials ready to use when the tardy bell rings.

**\*In addition, OBEY ALL SCHOOL RULES! We will be following ALL guidelines set forth in the student handbook!**

**NOTE TO PARENTS**

Please be assured that I will do everything I can to provide my students with the best learning environment and experiences possible. I welcome any opportunities to speak with you by phone or in a conference about your son or daughter’s progress in my class. It is important to me that you are also a part of the education process. Feel free to contact me or visit me during my planning period (1:55-2:45) so that we can discuss your concerns.

Thanks for your cooperation,

Mrs. Amy Klein Wesselman  
 Phone: 484 – 4178  
 E-Mail:amy.wesselman@owen.kyschools.us

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This form must be signed by both student and parent and kept on file in the student’s folder.  
*The classroom guidelines have been made known to me and explained completely.*

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*Student Signature* *Date*

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*Parent(s) Signature* *Date*