About Me

- 3rd year at Chattahoochee High School
- 12th year teaching (previously at college level)
- BS in Geology
- MS in Geological Sciences
- PhD in Chemistry with emphasis in Geology

- Two kids: Riley (12) and Spencer (7)
About the course

- Lectures geared towards understanding major concepts related to Sustainability

- Activities
  - Exploration along Nature Trail / Cross County Trail / Creek
  - Growing plants in the Greenhouse

- Labs
About the AP Environmental Science Course

The AP Environmental Science course is designed to engage students with the scientific principles, concepts, and methodologies required to understand the interrelationships within the natural world. The course requires that students identify and analyze natural and human-made environmental problems, evaluate the relative risks associated with these problems, and examine alternative solutions for resolving or preventing them. Environmental science is interdisciplinary, embracing topics from geology, biology, environmental studies, environmental science, chemistry, and geography.
About the AP Environmental Science Course

Prerequisites

Students should have completed two years of high school laboratory science—one year of life science and one year of physical science (e.g., a year of biology and a year of chemistry). Due to the quantitative analysis required in the course, students should also have taken at least one year of algebra. Also desirable (but not necessary) is a course in earth science.
About the AP Environmental Science Course

College Course Equivalent
The AP Environmental Science course is designed to be the equivalent of a one-semester, introductory college course in environmental science.

Lab Requirement
Although there are no specific AP Environmental Science labs or field investigations required for the course, it is required that students have the opportunity to spend a minimum of 25% of instructional time engaged in hands-on, inquiry-based laboratory and/or fieldwork investigations.
About the AP Environmental Science Course

### Practice 1: Conceptual Knowledge

**Explanation:**
- Explain environmental concepts, processes, and models presented in text form.

### Practice 2: Visual Representations

**Analysis:**
- Analyze visual representations of environmental concepts and processes.

### Practice 3: Text Analysis

**Analysis:**
- Analyze scientific information about environmental issues.

### Practice 4: Scientific Experiments

**Analysis:**
- Analyze research studies that test environmental principles.

### Skills

- **Describe environmental concepts and processes.**
- **Explain environmental concepts and processes.**
- **Explain environmental concepts, processes, or models in text form.**
- **Describe characteristics of an environmental concept, process, or model represented visually.**
- **Explain relationships between different characteristics of environmental concepts, processes, or models represented visually:**
  - In theoretical contexts
  - In applied contexts
- **Explain how environmental concepts and processes represented visually relate to broader environmental issues.**
- **Identify the author’s claim.**
- **Describe the author’s perspective and assumptions.**
- **Describe the author’s reasoning based on evidence to support a claim.**
- **Evaluate the credibility of a source:**
  - Recognize bias
  - Scientific accuracy
- **Evaluate the validity of conclusions of a source or research study:**
  - Based on evidence
  - Analyze and interpret data from experiments and studies.

### Diagram

[Diagram showing AP Environmental Science practices and skills]
# About the AP Environmental Science Course

## AP Environmental Science Science Practices (cont'd)

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<th>Practice 6</th>
<th>Practice 7</th>
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<td><strong>Data Analysis</strong></td>
<td><strong>Mathematical Routines</strong></td>
<td><strong>Environmental Solutions</strong></td>
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<tr>
<td>Analyze and interpret quantitative data represented in tables, charts, and graphs.</td>
<td>Apply quantitative methods to address environmental concepts.</td>
<td>Propose and justify solutions to environmental problems.</td>
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- **Practice 5**
  - Describe patterns or trends in data.
  - Describe relationships among variables in data represented.
  - Explain patterns and trends in data to draw conclusions.
  - Interpret experimental data and results in relation to a given hypothesis.
  - Explain what the data implies or illustrates about environmental issues.

- **Practice 6**
  - Determine an approach or method aligned with the problem to be solved.
  - Apply appropriate mathematical relationships to solve a problem, with work shown (e.g., dimensional analysis).
  - Calculate an accurate numeric answer with appropriate units.

- **Practice 7**
  - Describe environmental problems.
  - Describe potential responses or approaches to environmental problems.
  - Describe disadvantages, advantages, or unintended consequences for potential solutions.
  - Use data and evidence to support a potential solution.
  - Make a claim that proposes a solution to an environmental problem in an applied context.
  - Justify a proposed solution by explaining potential advantages.
# About the AP Environmental Science Course

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About the AP Environmental Science Course

Big Ideas
The big ideas serve as the foundation of the course and allow students to create meaningful connections among concepts. They are often overarching concepts or themes that become threads that run throughout the course. Revisiting the big ideas and applying them in a variety of contexts allows students to develop deeper conceptual understanding. Below are the big ideas of the course and a brief description of each.

**BIG IDEA 1: ENERGY TRANSFER (ENG)**
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 EARTH SYSTEMS (ERT)**
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 (EBI)**
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 (STB)**
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.

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Contact me / Communication

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