



AP ENVIRONMENTAL SCIENCE

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Course Description

Welcome to APES! This is an interesting and challenging course that is designed to be the equivalent of a college introductory Environmental Science Course, usually taken by Environmental Science majors during their first year. The main goals of APES are 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. This class aims to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of the Environment. It will be extensively based on independent work, lecture/discussion, student presentations and debates, and a series of in-depth lab investigations and several field studies. A minimum of one period per week will be spent on lab or field work. The content of the course is easily understandable, but the solutions to problems are complex and ever-changing. That is the reason why Environmental Science is such an exciting topic...there is always something new to learn!

Required Materials: A 3-ring binder STOCKED with paper at all times, blue/black pens and pencils (regular and colored), and several colors of highlighters. Calculators are allowed in class AND ALSO NOW ON THE Final AP Environmental Science Exam, so it is strongly recommended that you have your own calculator and bring it every day to class!

Guidelines for Success:

In this class, we will use the **CHAMPS** framework to clearly define expectations for all activities. CHAMPS stands for:

- **Conversation** – Can students talk during this activity? If so, about what and with whom?
- **Help** – How do students get the teacher's attention or assistance?
- **Activity** – What is the task or objective students should be working on?
- **Movement** – Are students allowed to move around? If so, when and how?
- **Participation** – What does appropriate participation look and sound like?
- **Success** – Following these expectations leads to a positive and productive learning environment.

Before each activity, I will provide clear CHAMPS expectations so students know exactly how to achieve success. Visual CHAMPS cues will be posted in the classroom and referred to regularly to reinforce expectations.

Student Evaluation:

Grades are determined every nine weeks by the following:

- (1) **Digital Notebook:** This is your essential framework for the course!!! Each unit, you will get instructions on what to put in each unit's section of your digital notebook. Each unit's materials are due on the test day for that unit and the whole notebook is due at the end of the semester. I will explain this notebook in greater detail on the first few days of school.
- (2) **Unit Tests:** Each test will be made using questions from AP Classroom and will be composed of approximately 30-40 multiple-choice and 1-2 Free Response Questions. Test corrections are possible IF you completed the Progress Check in AP classroom for that unit and score above 50%. **Science test days are Mondays and Wednesdays this year, unless circumstances interfere. DON'T be absent on test days!!!**
- (3) **Labs:** Students will write one formal report every nine weeks on experiments they have designed or performed. These reports will include the major points of the Scientific Method. This formal lab will count as a lab/project

grade. Other minor lab write-ups will also be incorporated into the course and each lab will count as a percentage of your overall lab grade.

- (4) **Presentations:** Each semester, students will prepare and present at least one PowerPoint Presentation on an assigned topic, these may be individual and/or group. Topics and grading rubrics TBA.
- (5) **Homework:** Daily assignments will be given mostly every day. If no additional assignment is given, students should be working in their interactive notebooks. **Active reading of the text is essential for success in this course** as we will not be able to cover all topics in class!
- (6) **Classwork:** There will be daily classwork assignments.
- (7) **Final Exam:** The **REQUIRED national AP Environmental Science Exam is Friday, May 15th 2026 at 8 am.** There will be review sessions during Flex & possibly afterschool. **My Final Exam for the course will be discussed in class closer to the end of the semester.**

Grades:

Laney High School's grading policy aligns with the New Hanover County Schools (NHCS) grading policy referenced below ([3400-R Semester](#)).

NHCS Evaluation of Students Performance Regulations (3400-R) HIGH SCHOOL

The following implementation is the **minimum** requirement and is outlined for students who are failing. School staff should always consider additional opportunities for growth when any student is underperforming.

Quarter 1 (Q1) and Quarter 3 (Q3)	- All assignments will appear in PowerSchool as a direct reflection of student performance (0-100%). - Documented two-way communication with parent/guardian will occur bi-monthly (twice a month) if their child is failing the course, one of which should be a parent conference. - Q1/Q3 grades will appear as the following: (90-100) A (80-89) B (70-79) C (60-69) D (50-59) F (0-49) INC* *Teachers will temporarily put an "incomplete" in PowerSchool for students in the (0-49% grade range for the overall Q1 grade) - Parents of students whose final average is an F or an INC will be notified that their child will receive an academic contract. The academic contract will outline academic support and opportunities to allow the students to gain a greater understanding of missed skills and improve their academic performance. - After the parent, student, and teacher have agreed on an academic contract, the student will have two weeks to fulfill the requirements of the contract. - Once students fulfill the contract, within the two-week allotted period, the Q1/Q3 grade will be updated. - If a student fails to fulfill their academic contract they will receive the grade floor of an F, numerically presented as a 50.
Quarter 2 (Q2) and Quarter 4 (Q4)	- All assignments in Q2/Q4 will appear in PowerSchool as a direct reflection of student performance (0-100%). - Parents will be contacted bi-monthly (twice a month) if their child is failing the course. The teacher will work with the students and parents to identify assignments that allow the student to gain a greater understanding of missed skills and improve their academic performance prior to the end of the semester. - Q2/Q4 grades will appear as the following: (90-100) A

	○ (80-89) B ○ (70-79) C ○ (60-69) D ○ (0-59) F
Final Course Grade (F1) (F2)	● The final course grade will appear in PowerSchool as a direct reflection of student performance (0-100%).

Grade Weights:

Assignments are divided into categories, each with a specific weight contributing to the final grade. Categories include:

Q1 & Q3= 35% Major, 35% Minor. 15% Formative. 15% Mid Term

Q2 & Q4= 40% Major, 40% Minor, 20% Formative

- **Major Assessments:** Tests, projects, research papers, and other significant assignments.
- **Minor Assessments:** Quizzes, classwork, homework, and other smaller assignments.
- **Formative Assessments:** Class participation, engagement, and other related activities.
- **Final Assessment (20% Overall Grade) Affects F1, S1, and/or S2**

Academic Honesty:

- The Laney High School Academic Integrity Policy can be found [here](#).

Class Expectations/Rules:

1. Abide by all school policies, especially Tardies and Cell Phones.
2. Respect EVERYONE in class. Bring your laptop EVERY DAY!!
3. Class begins and ends when the bell rings, no standing by the door early.
4. You may have a bottled drink in class on your desk. No food allowed! You may chew gum as long as I do not hear it or see it (aka...no bubbles), but not on lab days!
5. Weekly assignments are due each Sunday in Canvas unless otherwise stated. Late work will be accepted for -25% up to 5 days late (5 points per day) and no more than ½ credit after that. Assignments over 30 days late will not be accepted.
6. Attendance is expected! You will not be able to make up some labs/activities due to fieldwork and/or live specimens.
7. **Missed assignments:** If you know you will miss class due to doctor appts, sports, other school activities, etc... you should come by and get any papers for the day before you check out or turn in completed work. Only tests missed as a result of an EXCUSED absence may be made up. That means a note from the **attendance office**, or an email from your parents!
 - a. **EXTRA HELP/Make up work opportunities:** I am also available EVERY MORNING before school and during Flex Tuesday/Thursday.
8. I DO NOT tolerate cheating! If you are caught cheating (cheat-sheet, eye wandering, passing someone else's work off as your own, copying homework/class work, giving answers, writing on desk/body parts, using phones, AI programs, etc..) your parents will be called and you will receive a zero for that assignment. You will not be allowed to retake/redo that assignment.

LABORATORY and FIELD INVESTIGATIONS: Laboratory and field investigations are designed to complement the lecture portion of the course by providing opportunities to learn about the environment through firsthand observations, to test concepts and principles which have been introduced in class, to explore specific issues and problems in greater depth, and to gain an awareness of the importance of confounding variables which exist in the real world. Investigations will be diverse and will include indoor laboratory activities, outdoor activities, as well as field experience outside the confines of the campus. The labs are designed to invite students to think critically, to observe environmental systems, to develop and conduct well designed experiments, to utilize appropriate techniques and instrumentation, to analyze and interpret data, to present data orally and in the form of statistical and graphical

presentations, to apply concepts to the solution of environmental problems, to form conclusions and to propose further study.

THE EXAM: Friday, May 15th 2026 at 8 am: The A.P. Environmental Science Exam is a national exam created by the College Board and Educational Testing Service. ***This exam is 2 hours 40 minutes in length and consists of two parts: a multiple-choice section consisting of 80 questions and forming 60% of the exam grade, and a free response section consisting of 3 free-response questions and forming 40% of the exam grade.*** The multiple choice section is designed to cover the breadth of your knowledge and understanding of environmental science and includes thought provoking problems and questions based on fundamental ideas from environmental science as well as questions based on the recall of basic facts and major concepts. The free-response section emphasizes the application of principles in greater depth; you will need to organize answers to broad questions, demonstrating reasoning and analytical skills, as well as the ability to synthesize material from several sources into a coherent essay. There are three types of free response questions: design and analyze an investigation, analyze an env. problem and propose solutions using models, & analyze an env. problem and propose solutions using calculations . ***It is important to stay tuned to announcements regarding review sessions and materials. Failure to take the APES Exam on its scheduled date and time will result in a fine.***

Text: **Environmental Science for AP** by Friedland and Relyea 2nd Edition, 2015

Overview of APES Curriculum

Below you'll find:

- the 4 **Big Ideas** that will recur throughout the course
- The **Units** as outlined by the College Board, along with the percentage of the AP exam represented by each unit, along with the major **topics** covered in each unit.
- The **Science Practices**- skills we'll be practicing all year under each unit.
- A list of **required laws and treaties** that you are responsible for knowing. These will also be integrated throughout the year.
- Common **task verbs** used in FRQs.

Big Ideas

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 (EIN)

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.

Science Practices

AP ENVIRONMENTAL SCIENCE Science Practices			
Practice 1	Practice 2	Practice 3	Practice 4
Concept Explanation 1 Explain environmental concepts, processes, and models presented in written format.	Visual Representations 2 Analyze visual representations of environmental concepts and processes.	Text Analysis 3 Analyze sources of information about environmental issues	Scientific Experiments 4 Analyze research studies that test environmental principles

AP ENVIRONMENTAL SCIENCE Science Practices (cont'd)		
Practice 5	Practice 6	Practice 7
Data Analysis 5 Analyze and interpret quantitative data represented in tables, charts, and graphs	Mathematical Routines 6 Apply quantitative methods to address environmental concepts	Environmental Solutions 7 Propose and justify solutions to environmental problems

Required Laws and Treaties:

- CLEAN AIR ACT
- CLEAN WATER ACT
- CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA (CITES)
- COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA)
- MONTREAL PROTOCOL
- KYOTO PROTOCOL
- ENDANGERED SPECIES ACT
- SAFE DRINKING WATER ACT (SWDA)
- DELANEY CLAUSE OF FOOD, DRUG, AND COSMETIC ACT
- RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

Task Verbs Used in Free Response Questions:

The following task verbs are commonly used in the free-response questions:

Calculate: Perform mathematical steps to arrive at a final answer, including algebraic expressions, properly substituted numbers, and correct labeling of units. Showing work is required.

Describe: Provide the relevant characteristics of a specified topic.

Explain: Provide information about how or why a relationship, process, pattern, position, situation, or outcome occurs, using evidence and/or reasoning to support or qualify a claim. Explain "how" typically requires analyzing the relationship, process, pattern, position, situation, or outcome; whereas, explain "why" typically requires analysis of motivations or reasons for the relationship, process, pattern, position, situation, or outcome. Also phrased as "give one reason."

Identify: Indicate or provide information about a specified topic, without elaboration or explanation.

Justify: Provide evidence to support, qualify, or defend a claim and/or provide reasoning to explain how that evidence supports or qualifies the claim.

Make a claim: Make an assertion that is based on evidence or knowledge.

Propose a solution: Provide a proposed solution to a problem based on evidence or knowledge.

Major Topics For the Year

1. The Living World: Ecosystems. (6-8%) 9-10 Blocks

1. Introduction to Ecosystems **ERT**
2. Terrestrial Biomes **ERT**
3. Aquatic Biomes **ERT**
4. The Carbon Cycle **ERT**
5. The Nitrogen Cycle **ERT**
6. The Phosphorus Cycle **ERT**
7. The Hydrologic (Water) Cycle **ERT**
8. Primary Productivity **ENG**
9. Trophic Levels **ENG**
10. Energy Flow and the 10% Rule **ENG**
11. Food Chains and Food Webs **ENG**

2. The Living World: Biodiversity (6-8%) 7-8 Blocks

1. Introduction to Biodiversity **ERT**
2. Ecosystem Services **ERT**
3. Island Biogeography **ERT**
4. Ecological Tolerance **ERT**
5. Natural Disruptions to Ecosystems **ERT**
6. Adaptations **ERT**
7. Ecological Succession **ERT**

3. Populations (10-15%) 8-9 Blocks

1. Generalist and Specialist Species **ERT**
2. K-Selected r-Selected Species **ERT**
3. Survivorship Curves **ERT**
4. Carrying Capacity **ERT**
5. Pop. Growth & Resource Availability **ERT**
6. Age Structure Diagrams **EIN**
7. Total Fertility Rate **EIN**
8. Human Population Dynamics **EIN**
9. Demographic Transition **EIN**

4. Earth Systems & Resources (10-15%) 9-10 Blocks

1. Plate Tectonics **ERT**
2. Soil Formation and Erosion **ERT**
3. Soil Composition and Properties **ERT**
4. Earth's Atmosphere **ERT**
5. Global Wind Patterns **ERT**
6. Watersheds **ERT**

7. Solar Radiation and Earth's Seasons **ENG**
8. Earth's Geography and Climate **ENG**
9. El Niño and La Niña **ENG**

5. Land and Water Use (10-15%) 10-11 Blocks

1. The Tragedy of the Commons **EIN**
2. Clearcutting **EIN**
3. The Green Revolution **EIN**
4. Impacts of Agricultural Practices **EIN**
5. Irrigation Methods **EIN**
6. Pest Control Methods **EIN**
7. Meat Production Methods **EIN**
8. Impacts of Overfishing **EIN**
9. Impacts of Mining **EIN**
10. Impacts of Urbanization **EIN**
11. Ecological Footprints **EIN**
12. Introduction to Sustainability **STB**
13. Methods to Reduce Urban Runoff **STB**
14. Integrated Pest Management **STB**
15. Sustainable Agriculture **STB**
16. Aquaculture **STB**
17. Sustainable Forestry **STB**

6. Energy Resources & Consumption (10-15%) 7-8 Blocks

1. Renewable & Nonrenewable Resources **ENG**
2. Global Energy Consumption **ENG**
3. Fuel Types and Uses **ENG**
4. Distribution of Natural Energy Resources **ENG**
5. Fossil Fuels **ENG**
6. Nuclear Power **ENG**
7. Energy from Biomass **ENG**
8. Solar Energy **ENG**
9. Hydroelectric Power **ENG**
10. Geothermal Energy **ENG**
11. Hydrogen Fuel Cell **ENG**
12. Wind Energy **ENG**
13. Energy Conservation **ENG**

7. Atmospheric Pollution (7-10%) 7-8 Blocks

1. Introduction to Air Pollution **STB**
2. Photochemical Smog **STB**
3. Thermal Inversion **STB**
4. Atmospheric CO₂ and Particulates **STB**
5. Indoor Air Pollutants **STB**
6. Reduction of Air Pollutants **STB**
7. Acid Rain **STB**
8. Noise Pollution **STB**

8. Aquatic & Terrestrial Pollution (7-10%) 7-8 Blocks

1. Sources of Pollution **STB**
2. Human Impacts on Ecosystems **STB**
3. Endocrine Disruptors **STB**
4. Human Impacts on Wetlands/Mangroves **STB**
5. Eutrophication **STB**
6. Thermal Pollution **STB**
7. Persistent Organic Pollutants (POPs) **STB**
8. Bioaccumulation and Biomagnification **STB**
9. Solid Waste Disposal **STB**
10. Waste Reduction Methods **STB**
11. Sewage Treatment **STB**
12. Lethal Dose 50% (LD₅₀) **EIN**
13. Dose Response Curve **EIN**
14. Pollution and Human Health **EIN**
15. Pathogens and Infectious Diseases **EIN**

9. Global Change (15-20%) 7-8 Blocks

1. Stratospheric Ozone Depletion **STB**
2. Reducing Ozone Depletion **STB**
3. The Greenhouse Effect **STB**
4. Increases in the Greenhouse Gases **STB**
5. Global Climate Change **STB**
6. Ocean Warming **STB**
7. Ocean Acidification **STB**
8. Invasive Species **EIN**
9. Endangered Species **EIN**
10. Human Impacts on Biodiversity **EIN**

Please Sign and return to Mrs. Bleaking

APES Student/Parent Contract

I have read, understood, and agreed to the aforementioned syllabus.

Printed student name _____

Period: 4, Spring 2026

Student signature_____

Student contact phone _____

Student e-mail_____

Student Known Allergies and Plan_____

Parent signature_____

Parent contact phone _____

Best time(s) to call _____

Parent e-mail_____

Other Information you think I should know: