

# AP Environmental Science Course Outline

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## Course Description & Overview

College Board provides an extensive and thorough description of AP Environmental in a 244 page guide. This guide is accessible on their website and I also provide a link to the guide on my own website. The following is a brief description of the 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.”

The AP Environmental Science course consists of nine units each which is grounded in 4 “Big Ideas”. Each unit has two components. The first component is Science Practices also known as procedural knowledge. Here, students develop and apply science skills, essentially it requires students to demonstrate what they can “do”. The second component is Course Content also known as declarative knowledge. In this component, students are taught the concepts and principles that form the foundation of our understanding of the natural world and our relationships to it, essentially it requires students to demonstrate what they can “know”.

## Learning Expectations

College Board provides a detailed description of learning goals for every unit. Each unit is broken into small subsets (ex. 1.1, 1.2 etc). Each subset contains 3 levels of understanding: Enduring Understanding, Learning Objective and Essential Knowledge. In each of these College Board provides a succinct yet detailed written description of what students are expected to know and be able to do. My instruction is aligned with these same specific expectations. I must add however, that I have additional and more general expectations for my students that transcend the specifics of the course. It is my hope that I can foster some level of independent learning in each of my students. More importantly I hope to instill a genuine and general love of learning so that they become “life long learners”.

I have found that grading practices and philosophies can vary tremendously from one teacher to another. For that reason, this topic became a hobby of mine midway through my career. Starting with the research followed by trial and error by implementing different practices in the classroom I have found comfort in what might be described as “authentic grading”. The principles include but are not limited to the following. Grades should reflect the student’s ability to demonstrate the practices and the content as described by the standards of the course. This means that students entire grade is determined by their performance on summative examinations that assess only the standards of the course. Grading anything else other than standards only dilutes and misrepresents the students true abilities and understandings. Secondly, assessing occurs frequently. However, not all assessments are destined for the grade book, in fact most assessments are formative in nature. These assessments drive instructional decisions for the teacher and learning strategies for the students. Third, grades should effectively predict student performance on end of the year high stake exams. For example the letter grade “A” communicates to the stakeholders (students, parents and admin) that the student will very likely score a 4 or 5. Likewise a “D” communicates that the student is not likely to pass the exam. Fourth, assessments should be fair. This means a lot things one of which is the tests should reflect the expectations and the instruction. Lastly, research shows that the less integers your grades have the more accurate and reliable they will be. Many prestigious universities have moved to pass/fail demarcations for this reason. I use letter grades rather than numerical percentages on a 100 point scale.

## **In Summary: Grading Policy**

Tests, Labs and Progress Checks are the only reported grades.

Labs 10%

Progress Checks 10%

Multiple Choice Exams 53%

Free Response Exams 27%

- A's are difficult to earn and Failing is difficult to do
- Test scores are reported as letter grades-Grades
- \*Re-taking exams are possible
- \*Grading scale is aligned closer to AP Exam grading scales

My performance expectations for students is simple. "Do the best you can, with what you have and where you are". That is all I can ask of you. Having said that, I will assume that all my students share the same goal to pass the AP exam in May. If for some reason, that is not your goal, that I also fine. I will help you find success in my class and provide you a rich learning environment so that you might leave a better student.

## **Assessment of Progress and Proficiency**

Formative assessments can take many forms in the classroom and many of these happen in my head (the "art of teaching"). However, this does nothing for stakeholders wanting to understand a students progress and proficiency at some point in time. Thankfully, College Board offers a website with resources to solve that issue. Here students are assigned (class work and /or homework) a variety of tasks from multiple choice questions, written responses, progress checks and videos. Every aspect of a students participation on these tasks are recorded. Any stakeholder with access to this site can quickly assess a students participation and mastery on a number of different formatives.

Summative Assessments include multiple choice exams, free response exams and lab assessments. The exam questions and rubrics are provided by College Board. This is a wonderful resource since the questions are likely to reflect the

style, level, wording, and emphasize the most important ideas that students will likely see in May on the AP Exam. College Board is after all the author of the AP Exams, one expect very good alignment. Although I personally disagree with the idea timed tests, the AP exam is timed, as a result I do create timeframes on each exam to help students work at a pace they will need in May. Using my experience and expertise I dictate which questions and how many questions constitute my summative exams. Lab assessments are likely to be my own creation. Lab assessments measure the big ideas and relevant science practices, within each lab and they are usually much shorter in duration.

## **Course Materials**

Textbook: Living in the Environment 19th Ed by Tyler Miller

Materials: You must have

1. Something to write with
2. Something to write on
3. And somewhere to put it

## **Classroom Procedures**

### **Class Atmosphere:**

Safe, Comfortable, Focused, Productive and Laid Back. As a teacher I will follow school policies regarding safety protocols. The physical setting will be clean and organized. A mutual respect towards each other is required so that we all may feel emotionally comfortable as well as physically. We “get after it” in my class. We have daily and long term goals and we will work from bell to bell each day to achieve those goals. Finally, the class is fun and stress free. “My students and I will do the best we can, with what we have and where we are”.

### **Class Rule:**

Just one! In my classroom we are there to learn and to teach one another therefore anything that gets in the way of that is prohibited!  
I do not “major in the minors”.

**Attendance:**

Attendance is your personal matter. I have no attendance policy nor do I have any punitive measures for excessive absences. Know this...The more time you are in class the more you will learn and the more likely you will find success.

**Tardies:**

Getting to class on is your personal matter. I have no trade policy nor do I have any punitive measures for excessive tardies. Know this...The more time you are in class the more you will learn and the more likely you will find success. If there is something you must do that may cause you to be tardy might I suggest you come to class on time and then I will be happy to write you a pass so that you are not breaking any rules.

**Homework:**

There is homework every night. I will assign tasks that will help you perform better on the exams, whether you do it or not is up to you. Whether you spend 5 minutes or 50 minutes is up to you. You get out of this life what you put it into it. You will not get points for doing homework nor will you receive a zero for not doing it. Homework serves as practice and preparation if you feel like you need it help then do it if on the other hand you feel confident about that days content or skills then work on an other class.

**Make Up Work:**

My assignments (particularly those that I grade) are relevant and serve a purpose. If a student misses an assignment, this behavior does not change the assignment's purpose or importance therefore I accept all late and missing work. It is the responsibility of the student to make up any work missed due to an absence I am not responsible for reminding students when they are missing work.

**Late Work:**

Laboratories will be made up at the discretion of the teacher and in most cases the assignment will not be the same. Note: I highly suggest that you plan to attend every class, absences are "killers" in AP science classes.

**Notes:**

Over the years I have developed an aversion for note taking during class. In my experience students are so concerned and focused on the act of writing itself they become stenographers rather than students trying to learn novel ideas and concepts. In class I encourage my students to engage their sight, hearing and speech. I ask students to look carefully at what I am showing them. I ask them to really think about what is being said. And finally I ask to discuss and question what is being taught. Removing the need to take notes gives students the freedom to make the connections necessary for learning. Further, it increases the breadth and depth of classroom discussions.

Students who prefer reading and writing as their mode of learning are encouraged to take notes at home, ideally prior to the teaching of those topics.

**Passes:**

I will give hall passes liberally, students have complicated and stressful lives like all of us and if they have something pressing to do I would rather let them get it over with otherwise they will be preoccupied with those thoughts and not on my teaching. Bathroom passes are distributed upon request. I am not a gate keeper to a students "biological callings". Requiring a student to use the restroom only when its convenient for the teacher does not promote a comfortable environment and in some cases it is unhealthy.

**Extra Credit:**

Yes and No. If you earn an "A" and you have a desire to learn even more then I will provide extra credit for you. In all other cases there is absolutely NO extra credit offered. Students asking for extra credit usually means one of two things. First, "the assignment was not convenient for me when you gave it originally but now a week before grades are due it is magically convenient". Or, it has come to mean I did poorly on my assessment that measured the skills and concepts but can do something else not related to standards to inflate my grade. Finally, this whole issue is mute when you consider that I accept late work and offer re-takes on assessments.

**Cell Phones:**

I taught long before cell phones were available and thus I have experience with students before, during and after the availability of this technology. I am not a fan of cell phones in the classroom. I could likely write a dozen pages explaining why I feel they are detrimental to learning. As a result, I ask my students to place

their cell phones in an organizer that I provide as they enter class and they may grab them when they leave. I am however reasonable and empathetic towards their needs. If for example a student forgot to get a ride home and would like to text their mom asking for a ride, then of course I will allow brief communications for important and pressing issues.

### **Exam Make Ups and Exam Re-Do's:**

Philosophically and pedagogically I agree with the concepts of test redo's. However unlimited and unregulated test redo's, has become a struggle from a practical and pragmatic standpoint. Let me preface my solution with the following; I do not believe it is pedagogically sound to grade behavior or leverage student behavior with grades. Having said that I assign students a formative progress check prior to all summative exams, this progress check being formative in nature carries either little or no weight and as such many students simply ignored a valuable learning opportunity and an integral piece to my overall instruction. To solve this problem and address the issue of retakes, **I will implement the following new policy.** *Any student that would like to be eligible for test retakes must complete each progress check prior to the Unit Exam. Failing to complete one or more progress checks prior to the exam will make that student ineligible for test retakes in that quarter. Additionally, only students who are borderline (defined by "within 2 percentage points of the next higher grade") to the next higher grade are eligible for retakes. Thus only students who have completed what I have required are eligible and I recognize that as a teacher my assessments are rarely precise enough to provide a degree of confidence within 1-2% points.*

### **Calendar:**

I hold to a loose calendar of events and assignments. I have the daily lessons and their order available on my website. But I will not beholden to a strict syllabus because "life happens" and I need some flexibility so that I might use my judgement to decide when the class is ready for the summative assessments. Regardless, student will likely have a full weeks notice prior to any summative assessments.

### **Home & School Connections**

I have created my own website that serves as a resources center for my students and another avenue of communication between stakeholders. The site is publicly available 24/7. The website is extensive but if you can not find what you are looking for please contact me. ([thebioedge.com](http://thebioedge.com))

**Canvas** will be used as a means of communication. In addition I will do my best to record what we did each day and reminders of upcoming assignments and activities.

All my contact information (**email: pmorone@pcschools.us**) can be found on my website.

## **Personal Philosophy (Specific to this Class)**

Three general objectives will permeate the course and the lessons: **Awareness**, **Acquisition** and **Action**.

The first objective is to increase **Awareness**. In my experience I have found an alarming level of unawareness when it comes to current and potential ecological issues (aside from climate change). Under this theme, the “Why” is explored. Why are these issues important and relevant? We will come to realize that human actions effect natural systems. Students will also come to appreciate the duality of nature; its resilience and fragility.

The second objective is the **Acquisition** of declarative and procedural knowledge. With an interdisciplinary approach we will increase our environmental literacy. Essentially learning “What” we know. We will understand the remarkable interrelationships that exist between the biotic and abiotic world. We will also realize that a complete understanding of environmental issues demands that we look into social, economic and political realms. This acquisition theme must also include procedural knowledge. Here, we learn the “How”. We explore the procedures and practice using the the tools that are responsible for generating the data that has lead to our current understanding of nature. We learn how to evaluate both data and sources of data. If I am successfully meet this objective students will become independent learners with a greater ability to evaluate benefits and risks associated with their actions and the actions of others.

The last objective is that of **Action**. We will examine actions taken in the past, discuss actions that we can take today and predict actions that may be needed in the future. To meet the needs of the future generations and live sustainably today we must become a generation of good stewards for the earth.