

General Advice for AP Classes

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1 Introduction

Hey! If you don't know me, I was a student at Franklin High for 2 years, graduating with the class of 2018. I'm writing this to pass on the research I've done on learning (epistemology) onto you for your own sake. Hopefully you can take what I say and use it to improve your own education/studying efforts and, ultimately, your AP exams. I did "pretty good" on a slew of AP tests, so I can personally vouch for the effectiveness of what the rest of this document will elaborate on.

1.1 A Disclaimer

This document outlines things on *how* to study and a bit of the *why*. Ideally this should be read multiple months before the actual AP exam; if you're reading this a month before the AP exam or less, I wouldn't recommend it. At that point, taking my advice on how to properly prepare will likely leave you studying in a way much different from how you normally do, which is a risk you shouldn't be taking a month or less before the AP exam. **You should resort to what has previously worked for you.**

2 On Note taking

I don't think anyone actually takes notes correctly. Hell, I don't even take notes. But that's because my notes suck.

2.1 You Should Take Notes

The biggest issue is that people very rarely refer back to their own notes. I'm not vouching for referring back to your notes because, chances are, your notes only do half of the job they're supposed to do. **The process itself of taking notes already benefits you.** By writing down what's being lectured/discussed, your brain is already trying to process and decide the most important information from the topic at hand. Both the physical act of writing it down as well as the aforementioned brain mechanisms work to help remember the material better.

2.2 Don't Copy the Board

However, in most AP classes (*especially* those that use Microsoft PowerPoint!), virtually *all* students opt to write down the material word-for-word. The most obvious consequence is that in choosing to do so, the student basically ignores the teacher's actual words. I have yet to see a class where the material on the board is sufficient to carry out all educational needs in the classroom.

When a teacher lectures, it's to add context, motivation and explanation of the material itself, which can often be more important than the actual surface level material. Essentially, whatever is being shown on the board is a crutch. Having had classes where the lectures were published after the class was over, I've had numerous experiences where the lectures on their own made no sense. Since one's notes, if copied word-for-word, are roughly the lecture, nothing is actually gained from the notes themselves.

Moreover, lectures are essentially just a list of important facts, which can just as easily be attained by plenty of other sources. Again, the most important thing to be gained by a teacher and the associated class time are the explanations and connections. In an AP class, the curriculum and “necessary info” is already published by the *College Board themselves*. **The extreme of writing down only what the teacher says will actually be better than just writing down what's on the board.**

2.3 Make Your Notes Good Enough that You'll Use Them

Your notes should act as an external storage for your memory; you should be able to read your notes and get all the necessary information. Most people's notes do this, but not completely. There's two additional details at play.

For one, people naturally remember material better if they understand it. To this end, your notes shouldn't be a list of relevant information. There needs to be additional input such that you, the reader, is able to extract not only facts, but to be able to gain/see connections between things.

In addition, **your notes should be clear enough that someone who was not in class should be able to understand the material.** In AP tests, the curriculum is linear such that material from the first chapters have *some* connection to the latter ones, but since classes teach from beginning to end, you will naturally not remember all the necessary concepts across the course. Your notes are written from the perspective of a certain quantity of knowledge, but this fails for reviewing the notes later on.

2.4 Make Your Notes Pretty

If you outline your notes, and do the same for every lesson in class, your notes will look like walls of text and it will not be easy at all to get through. The easy fix is to liberally use formatting tricks such as outlining/highlighting/colors etc.

Rewriting your notes onto your computer does wonders for remembering and ensuring quality notes at the cost of time. I'd do this for either very specific

concepts, or relatively broad ones. My notes for Acid-Base equilibrium (which was no more than a sixth of the class) took roughly a week to write. The use of rewriting your notes onto the computer is twofold. For one, your notes will literally look better and will be easier to read. But the intrinsic advantage of taking notes is multiplied in rewriting your notes; you can focus on what's important and rehash information that was perhaps not explained too well in your original notes.

This is literally what Microsoft OneNote is for, by the way.

2.5 Use Your Resources

When rewriting your notes or taking notes outside of the classroom, don't defer just to a singular source. Here is a list of resources that I personally used when learning for my AP tests.

- The classroom textbook
- *Other* textbooks
- Other qualified individuals
- Khan Academy
- Bozeman Science
- Crash Course (Caution! Crash Course is **very** surface level!)
- Prep Books e.g. The Princeton Review (I'll go into this more later, but don't overuse them)

3 Actually Preparing

This is likely what's the most important section depending on when you read this. Please give yourself around 2 months to start. If it's too easy you can lax the amount you study, but you do need time. Phrases like "5 weeks for a 5" aren't that useful since people differ on how they study and how well they know the material.

3.1 Mentality

Do not prepare with any mindset besides that you will get a 5. Raw talent does not exist. It's a legitimately bullshit and toxic mentality that serves no constructive purpose. If you're preparing for an AP test, you absolutely cannot be okay with a 4 while preparing. Even with the sunk-cost fallacy, you still need to put in as much effort as you can if you're genuinely aiming to do well on these tests. Sure, people will not need the same amount of effort/time to get the same result, but you're chasing after that result, and it doesn't matter if it took you ten hours or ten hundred.

3.2 Spaced Repetition

Spaced repetition is a learning technique that incorporates increasing intervals of time between subsequent review of previously learned material in order to exploit the psychological spacing effect. The spacing effect is the phenomenon whereby learning is greater when studying is spread out over time, as opposed to studying the same amount of content in a single session.

For example, suppose there are 3 boxes of questions called "Box 1", "Box 2" and "Box 3". The questions in Box 1 are the ones that the learner often makes mistakes with, and Box 3 contains the cards that they know very well. They might choose to study the Box 1 questions once a day, Box 2 every 3 days, and the Box 3 cards every 5 days. If they look at a question in Box 1 and get the correct answer, they "promote" it to Box 2. A correct answer with a card in Box 2 "promotes" that card to Box 3. If they make a mistake with a card in Box 2 or Box 3, it gets "demoted" to the first box, which forces the learner to study that card more often. The number of boxes/amount of time for each box is up to you.

I recommend Anki (a program) to do this for you.

3.3 Know the Test

One of the worst things is to take the test and be completely caught off guard. Researching the format of the test and knowing what is tested will go far in ensuring comfort during the actual test. Pretty much every test has a multiple choice section, a break, and then free response questions.

3.4 Don't Study too much at Once

There's two meanings to this; for one, obviously don't study so many topics at once that you end up getting confused and not digesting any of the information at all. The College Board splits the curriculum into multiple big ideas and if studying in depth, it's unreasonable to study more than one at once. If you already know the fundamentals of the topics, you can increase how many topics you can feasibly study in one session. To this end, there comes a point where one can essentially cover everything in one night. At that point, practicing becomes more important.

In terms of amount of time, study for roughly thirty minutes at a time, taking 5 minute breaks between them. After four or so periods, take a longer break up to thirty minutes. This goes out the window when one is practicing and no longer reviewing material.

3.5 Practice like it's a Test

Most of your studying should revolve around doing practice questions by means of spaced repetition, but you need to eventually take entire practice tests as well to get yourself used to the test. Don't guess (leave it blank if you don't know it at all!) and actually adhere to timing restrictions.

3.5.1 Move Around

Changing where you study has been shown to help.

3.6 Focus on Intuition and Connections over Information

A lot of the time, the questions on the AP exams necessitate inference and synthesis from your information instead of fact recall.

“Whenever you see a problem you really like [or is particularly unusual], store it (and the solution) in your mind like a cherished memory... The point of this is that you will see problems which will remind you of that problem despite having no obvious relation. You will not be able to say concretely what the relation is, but think a lot about it and give a name to the common aspect of the two problems. Eventually, you will see new problems for which you feel like could also be described by that name. **Do this enough, and you will have a very powerful intuition** that cannot be described easily concretely (and in particular, that nobody else will have).” - *A comment from a blog post by Evan Chen*

3.7 Practice Hard Questions

Actually try questions that you feel you do not know how to do. The curriculum of AP tests are fixed, and choosing not to do certain kinds of question is only going to hurt you in the long run. Repeating questions you already know how to do isn't an efficient use of time either (though you should still do some to remember. Refer back to spaced repetition.) This especially applies to the science and mathematics AP exams, where ignoring certain questions will absolutely come back to bite you since very similar questions show up every year.

Do try the Free Response Questions as well. The biggest difficulty in them is not doing the math or explaining, but coming up with an approach on how to do the question. For the much harder ones, the main challenge is “where do I even start?” You need to improve this skill for the subject and the only way is to practice. Even though the exact question (or even a similar one) may not show up again, it's the thought process and rehearsing the material you do know that will help.

3.8 Actually Review Solutions

If you get a question wrong, you absolutely want to find out what you were supposed to do and how to do it. This applies doubly for questions you didn't know how to do, but that may also necessitate you to learn the material as well. The key point is to understand where to start with the question. There's many ways to attack a multiple choice question, so you can ask around and use the solution that makes the most sense.

3.9 Materials

When it comes close to the test, practicing is infinitely more useful than just relearning the material.

Do use the international practice exams for the tests. They are a *bit* more “weird” than actual AP tests but are still the closest thing possible to a test.

The same list for materials on learning apply here.

3.9.1 Don’t Overuse Prep Books

“The Princeton literally tells you everything you need to know to get a 4 [on the AP Chemistry Test]” - *Bobby Fernandez, MIT class of 2022*

Prep books are really good because they condense everything necessary into a more manageable text. If it’s in the book, it’s essentially guaranteed that it’ll show up on the test. The issue is that prep books are essentially a list of facts (concepts if you’re lucky, though not necessarily) but will not give you intuition and finesse. You will surely have the base knowledge if you adhere to a prep book, but a reliance leads to “I know what this question is asking about but I’ve never seen anything like this before.”

3.10 Long Term Breaks

Studying literally everyday for an extended period of time is actually bad for memory retention. When you still have time before the AP test, it’s useful to take even days off at a time to digest the information.

3.11 The Night Before

You *probably* shouldn’t do any studying and should just focus on getting a good night’s sleep.

4 Test Day

4.1 Dress for your Ideal Temperature

Dress lightly (it’s in May!) but bring a blanket/jacket etc if you tend to get cold. Bring a pillow if you tend to finish early or for more comfort on the seats you’re given.

4.2 Bring Food and Drink

Carbohydrates the nights before are useful since they act as long-term energy storage. Bananas contain potassium which lower anxiety. Sugar give a short term energy boost which may be necessary to power through.

Bring water but only drink if you get thirsty (I ended up going to the bathroom *at least twice for every AP exam*)

4.3 Get your easy Points

If you do all the relatively easier questions at once, you will not only secure/guarantee a larger number of points, but in doing so, you will also build up momentum and a stronger mental state to tackle the harder questions.

4.4 Leave an Answer

Whether it be process of elimination or a lucky letter, please remember to at least have an answer down for every question. This counts for the free response questions.

“BS with confidence. You know, besides looking more convincing, there’s a chance that you’ll *actually realize [what to do] in the middle of your answer.*”
-Jesse Formaker

5 Conclusion

That's all I can think of for now. If you have any questions or suggestions etc, you can contact me at (856) 298 - 3386 or herr15@purdue.edu