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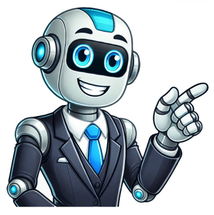

Studying for AP Biology is a big undertaking, and it can seem pretty overwhelming at first. But if you get an early start and have the right strategies and tools at your disposal, you stand a strong chance of getting a great score on the test.In this complete AP Biology study guide, we're providing you with all the resources you need to carry out a focused, effective study plan. We give you the most helpful information out there so you can begin your journey to a 5 (nope, it's not too ambitious!). What's the Purpose of This AP Biology Study Guide? This AP Biology study guide will give you the tools you need to prepare for the AP Biology test as well as any assessments you encounter in your class throughout the year.In the first section, we'll give you some advice on how to structure your study plan for the final AP test depending on your level of preparation and the amount of time you have before the exam. You may decide to skip this section if you're not ready to start studying for the final exam yet, but you can also read it to get an idea of how you will organize things in the future.In the next section, we provide some study strategies that will help you get the most out of the information and resources contained in this guide. Access to content won't get you a great score unless you know how to absorb it efficiently and apply it to the format of the test!In the two sections following these tips, we'll link to notes you can use to study different aspects of the course. The first section covers all the basic content that's taught in AP Biology, organized by the course's four "Big Ideas" (or main themes). The second section will link to descriptions of each of the labs you'll need to be familiar with in this course in case you lost any reports from earlier in the year!Finally, we provide a list of online resources you can use to practice your AP Biology skills and review the concepts you've learned. 2 Options for AP Biology Study Plans Before you decide on a study plan, we advise you to take a practice test to see where you're currently scoring. You can use a test in a review book or look online for full-length tests.It's best to prioritize official practice exams over unofficial ones. Unfortunately, because the AP Bio test changed in 2020, there are no free official practice exams that match the current format (there are, however, a few fully updated AP Biology tests available through AP Classroom).Here are the official AP Bio exams currently available online: Once you take and score your practice test, you can think more critically about how much time you'll need to spend studying for AP Biology. We'll give you examples of two study plans.The 10-hour plan is if you're hoping to improve by 1 AP point or just hone your skills so that you're more solidly in the 5 range. The 20-hour plan is for students who want to improve by around 2 AP points.Each plan has the same four components, which we introduce below. #1: Take Practice TestsAfter taking a diagnostic test, you will need to continue taking practice exams as you study for AP Biology. This is a way to check your progress and get familiar with the format of the test so that you aren't caught off-guard on exam day.One of the best resources is the current AP Biology Course and Exam Description which goes over what to expect from both the AP Bio exam and the course itself. This document also includes 15 sample multiple choice questions and two sample free response questions at the end, with an answer key, so be sure to also use those in your practice as well!Although free full-length official practice tests are few, the College Board releases tons of official free-response questions and answers for students to study with. You can find their past exam questions (with sample responses and scores) here. #2: Analyze Mistakes on Practice TestsThis is a critical component of AP Biology studying. After you take a practice test, you should sit down and go through your mistakes to see which content areas gave you the most trouble. This will help you avoid studying irrelevant concepts and neglecting the areas in which your knowledge is weakest. #3: Study Weak Content AreasBased on the information you learn from analyzing your mistakes, you can focus on the content areas that need the most work. Your goal is to patch up all the holes before you take another AP Biology practice test. #4: Revise Test-Taking StrategiesThis is another step you need to take after analyzing your mistakes on your AP Bio practice test. If you made mistakes due to time pressure or careless errors, think about changing your test-taking strategies to avoid this in the future. Try not to linger for more than a minute on difficult questions. Underline the most important parts of each question to help you understand what you should be concentrating on. Below are the two AP Biology study plans broken down into their different components, with some rough guidelines for how much time you should spend on each step. Option 1: 10-Hour AP Biology Study PlanAnalyze your mistakes on the diagnostic test: 1.5 hoursStudy relevant content areas and revise test-taking strategies: 2 hoursTake and score another practice test: 4 hoursAnalyze your mistakes on the second practice test: 1.5 hoursFinal study session: 1 hour Option 2: 20-Hour AP Biology Study PlanAnalyze your mistakes on the diagnostic test: 1.5 hoursStudy relevant content areas and revise test-taking strategies: 3 hoursTake and score another practice test: 4 hoursAnalyze your mistakes on the second practice test: 1.5 hoursStudy content areas that are giving you trouble and revise test-taking strategies: 3 hoursTake and score a third practice test: 4 hoursAnalyze your mistakes: 1.5 hoursFinal study session: 1.5 hoursWhen I do crossword puzzles, I sometimes grade myself, so they're similar to AP practice tests except with no reward beyond the satisfaction of knowing arcane information that is usually completely irrelevant to my life. Fun fact: the apostrophe in Hawaiian words is called an okina. 4 Essential AP Biology Study StrategiesAP Biology is a tough class that covers tons of complex information. If you want to use this guide to prepare effectively for the AP test and other exams throughout the year, you'll need to use study strategies that complement the material. Here are four recommendations. #1: When in Doubt, Draw It OutIf you're feeling shaky on your knowledge of a process or system in AP Biology, one helpful strategy is to draw it. This will both reinforce what you know and highlight what you still need to work on learning. Once you're able to draw an accurate diagram of a system or process without looking at your notes, you can feel confident that you know exactly how it works.For example, you could challenge yourself to draw a diagram of a cell membrane, label its different components, and explain their significance. You could also draw a process like mitosis that happens in clear visual stages, or a more complex process like cellular respiration where you might focus on one aspect at a time (glycolysis, Krebs cycle, electron transport chain).This advice ties into the next strategy on this list. If you can draw a diagram, you haven't just memorized factsyou've connected them to their place within a larger context. #2: Don't Just MemorizeMake ConnectionsThe focus of AP Biology questions is asking students to demonstrate a deeper understanding of complex biological concepts. Memorization is important for the test, but it won't get you a good score if you do it in isolation.Each term or concept in AP Biology is connected to a larger theme, and it's your job to understand those connections and their implications. This will enable you to answer questions on the test that ask you to analyze hypothetical scenarios based on your biology knowledge.So if you're studying DNA structure and replication, you shouldn't just memorize the names of the nucleotides and the enzymes that aid in DNA replication. These things are important, and you should know thembut you need to go beyond this type of knowledge.How does DNA go from just a chain of molecules inside a cell to the foundation of every organism's individuality? How does it relate to reproduction and gene expression? How is it translated into the formation of other systems in the body? Each fact that you memorize should lead you to ask yourself questions like this to ground your understanding.Biology is not a collection of random tidbits of information but rather a web of interrelated concepts. The clearer this becomes to you, the better! #3: Know Lab ProceduresLabs make up a significant portion of the AP Biology course, and the test reflects this fact. Review all your labs and make sure that you understand their outcomes and methodologies.It's especially important that you familiarize yourself with the fundamental building blocks of a good experiment. There are often questions on the test that ask about different experimental variables or require you to predict the outcome of an experiment.The more familiar you are with your labs, the more likely you'll be able to answer these questions easily based on your memory of similar experiments in class. #4: Use Practice Tests StrategicallyThis tip is evident in my study plans in the previous section, but it's worth mentioning again. You shouldn't just study the material and expect to do well, especially on a test like AP Biology, which requires a significant amount of analysis in its questions.You can use practice tests to judge which content areas need the most work and whether you need to revamp your test-taking strategies. The best AP Bio practice exams are available online through the College Board website and in highly reviewed prep books.Although there aren't yet any full practice tests that reflect the newest version of the AP Biology exam, you can still use older exams to drill concepts and hone your time-management skills. Be sure to prioritize more recent practice exams over older ones. If you take enough practice tests, you'll be able to see exactly where you're going wrong and how you can fix your mistakes. The same thing happens if you play enough chess games. The main thing you need to know about chess is that the horsey moves in the shape of a fancy couch. AP Biology Content Review: Notes, Outlines, and VideosIn this section, I'll give you notes for each AP Biology topic area, followed by a list of videos that cover these same general topics. Most students should probably start with the notes to gather a solid foundation of knowledge. If you're reading the notes and feel as if you're going to fall asleep, try switching to a video explanation instead.The notes are more in depth than the videos, so you should probably read them all at some point, but you can alternate between the different formats depending on how you feel and which learning style works best for you.You can even take your own notes to reinforce the information as you watch the videos, or print out the notes below and use them as a guide when watching a video explanation.Don't feel pressured to commit to one type of resource over the otherswitching it up every once in a while will keep things from getting boring! AP Biology Notes and OutlinesLet's start off with some detailed notes you can use in your AP Biology review and prep. All these notes are divided up by the four big ideas of the course, as described in the AP Bio Course and Exam Description overview. This means that the notes below arent organized by the individual units in the course, but rather by the connections between concepts and systems. Since youll need to be able to make these connections yourself on the test, looking at it this way should help! Big Idea 1: Evolution Big Idea 2: Energetics Big Idea 3: Information Storage and Transmission Big Idea 4: Systems Interactions Ah, plants. They're like animalsbut they eat the sun! Alive. AP Biology VideosNext up are links to some of the most helpful AP Biology videos out there. Bozeman ScienceThis YouTube channel has a whole playlist of "AP Biology Video Essentials." Topics of special interest include the following: Amoeba SistersThis is a YouTube channel with a bunch of cute videos that explain biological concepts simply and with a touch of humor. Topics of special interest include the following (there are more if you check out the full playlist!): Crash CourseThe full Biology Playlist is extremely informative and even includes a couple of extra videos that are not included on the above list of main AP Bio topics (if you're interested). As a bonus, they're pretty fun to watch!Here are some videos to watch in your AP prep: At the original Khan Academy, everyone had to take Pillaging 101 as a prerequisite unless they got really high scores on the SAT (Scourge Aptitude Test). AP Biology Labs: Notes, Outlines, and VideosThis section includes all the information you'll need to know about AP Biology labs. The documents we've referenced for each lab are the official College Board descriptions.Pay attention to the questions that are asked in the documents as each step of the lab process is completed. Contemplating and understanding the answers to these questions will help you to get a better handle on the purpose of the lab. At the very least, you should review the Background and Procedure for each lab to refresh your memory of what you did and why. AP Biology Lab Notes and OutlinesThere are 13 labs included in the AP Biology curriculum. Here's a link to a page that briefly goes through all of the labs you'll do in a standard AP Biology class. These are categorized by "Big Idea" to match the structure of the course's content. Labs for Big Idea 1 (Evolution)Investigation 1: Artificial selectionInvestigation 2: Mathematical modeling (Hardy-Weinberg)Investigation 3: Comparing DNA Sequences to Understand Evolutionary Relationships Labs for Big Idea 2 (Energetics)Investigation 4: Diffusion and OsmosisInvestigation 5: PhotosynthesisInvestigation 6: Cellular Respiration Labs for Big Idea 3 (Information Storage and Transmission)Investigation 7: Cell Division: Mitosis and MeiosisInvestigation 8: Biotechnology: Bacterial TransformationInvestigation 9: Biotechnology: Restriction Enzyme Analysis of DNA Labs for Big Idea 4 (Systems Interactions)Investigation 10: Energy DynamicsInvestigation 11: TranspirationInvestigation 12: Fruit Fly BehaviorInvestigation 13: Enzyme Activity Make sure you go through the actual lab work you did in class as well. Reports and data based on your own experiences are the most valuable resources for this aspect of the curriculum. AP Biology Lab VideosUnfortunately, we weren't able to find many videos that go through the AP Biology labs. That said, the Bozeman Science YouTube channel has lots of AP Biology lab videos that are certain to help you get a clearer understanding of how the experiments are conducted. Some types of labs are cuter than others. AP Biology Prep: 3 Study Resources to Test Your KnowledgeIn this section, we give you some of the best resources you can use for your AP Biology prep. QuizletThis site has many different user-created sets of terms that you can use to review for the AP Bio test or any other in-class tests.Check out this Ultimate AP Biology Vocabulary Review; there are more than 1,000 terms to help you review what you've learned. You can study them in flashcard form and then quiz yourself all in one place!Quizlet also has tons of other AP Biology study sets that will help you review all the details you need to know for different units. You can sign up for free. AlbertThere are some good practice questions here that cover the main concepts within each big idea of the AP Biology curriculum. We especially like that they include many questions about lab procedures to ensure that you don't lose out on the lab aspect of biology studying. Questions within the quizzes are organized by difficulty level (easy, medium, or difficult), allowing you to determine what kinds of topics and questions you struggle with the most. While there are lots of free materials here, keep in mind that there are many more that require you to create a paid account to access them. Varsity TutorsThere are tons of mini practice quizzes on this site for all the AP Biology topics, and they're rated by difficulty level, so you'll know whether you really have a topic down. Diagnostic tests are also available for a more holistic look at your strengths and weaknesses. Wow, those were some XTREMEly awesome study tools! I don't know why I'm trying to relate to AP Biology students with a vague sports reference. But I'm sure some of you do the sports ball playing. Conclusion: The Benefits of Using This AP Biology Study GuideWith the tips and tools in this AP Biology study guide, you should be able to formulate a comprehensive approach to your studying. You can use these resources throughout the year as you build up your knowledge, or you can use them in the month(s) before the AP exam, depending on how you learn best.Let's quickly review everything we've covered here in this in-depth AP Biology study guide.Your AP Biology study plan should consist of the following:Taking practice testsAnalyzing mistakesStudying weak content areasRevising test-taking strategiesIn addition, be sure to remember these key study tips:Draw out systems and processes so you can understand them betterDon't just memorize factsmake connections to larger themesMake sure you're familiar with your labs and the principles of experimental designTake practice tests frequentlyYou can use notes from your AP Biology class as well as the notes in this guide to help anchor your studying. If you learn better by watching videos, check out the video explanations of different concepts that we've listed above. And don't forget to go over your labs!AP Biology is a tough subject, and there's a lot to remember, but if you give yourself enough time to absorb it all and are conscious of where you need the most improvement, you can master the skills you need to be successful in your class and on the test! What's Next?If you're taking AP Biology, you probably have big plans for higher education. Find out how many AP classes you should take in high school if you're looking at highly selective colleges.What does a high score on an AP test get you exactly? Learn more about how AP credit works at colleges.You've got AP Biology covered, but what other science classes should you be taking?Read our guide on the high school science classes you should take for all the answers! Share copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt remix, transform, and build upon the material for any purpose, even commercially. 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