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# 1. THE BASICS:

## **Use a planner**

Having a single place to look for your to-do list of assignments streamlines your study planning process. Some schools have this through their online systems (ie. canvas or blackboard), but if not all your teachers are diligent about updating it, then you need to take it into your own hands.

## **Have all your study supplies in one place**

Make sure you have everything you need to study (ie. pencil, calculator, textbook, pens, highlighters).

## **Have a consistent time and place to study**

It's easier to get in the correct mindset if the 'when' and 'where' are consistent.

## **Eat, Sleep, and be Healthy**

If your brain and/or body is running on fumes then everything you do becomes more difficult, including studying.

## **Minimize Distractions**

Let those around you know where/when your dedicated study time is so that they know to avoid distracting you. No phone, no TV, no games, minimal music, etc.

## **Homework does not always equal studying.**

This can be a tough pill to swallow. Not all teachers assign effective homework. Meaning even if you do the homework for the class, it doesn't mean you've mastered the material and are prepared for the tests. The opposite is true as well, just because a teacher doesn't assign any homework doesn't mean that you know everything you need to.

## **You are responsible for your own learning.**

It's your brain, your focus, and your skills. There is a direct relationship between what you do to study and how much you learn. That's not to say schools and teachers don't share that responsibility, but, ultimately, it is up to you as the learner to commit things to memory.

## 2. TOP STUDY TIPS

- Give yourself enough time to study. Don't put yourself in a situation where you need to cram. Make a schedule and stick to it.
- Spaced repetition is your golden key to unlocking memorization. Learn some information, then review it multiple times over different time periods. Review the things you get wrong more often, and review the things you get correct less often.
- Have a consistent study time. Treat that time like any other scheduled event. You don't decide to skip work because your friend just texted you something funny.
- Take notes! Rewrite and review your notes. It is a simple and effective way to study.
- Manage your focus. 30 minutes of uninterrupted, focused studying can be more valuable than 2 hours of unfocused studying. Minimize distractions, know how long you can typically focus for, and find accountability for that focused time if you can.
- Study in a group. An effective study partner or group can multiply your productivity ten-fold. But be realistic about who you're studying with and how much they actually help or hurt your studying.
- Don't mix up being able to recognize something and being able to recall something. Watching a youtube video and recognizing a definition or being able to follow along as someone solves a question is not the same as being able to do so yourself. Always test yourself to see if you can recall and apply that information on your own.
- If you can't figure something out or recall a term, give yourself an extra few seconds to try to remember it. Too many students flip to the answer or check their formula sheet as soon as they don't remember. This hurts you more than it helps. You are essentially cheating your brain out of the opportunity to learn. Give your brain a bit of time to process the information properly.
- For math-based subjects, you have to put in the practice. Math is just as much about HOW you do something as it is about what answer you get, because at some point that math skill is going to be included as just one part of an even more advanced math skill. Practicing math means you're learning and reinforcing all of the large and small skills involved in that one question. Do your math homework. If your teacher doesn't give math homework, find some and practice until you don't make too many (or any) mistakes.

## 3. HOW TO STUDY

### WHAT:

Know what you're planning to study/get done this session. Are you completing assignments(worksheets, projects, papers) or are you learning new information? Do the more difficult subjects/assignments first. Don't leave them for later when you're already tired/losing focus!

### WHEN:

Have a consistent study time scheduled.  
Study when you're naturally the most awake/focused.  
Everyday or as close to it as possible. The more frequently you study, the shorter each study session needs to be.  
Prioritize the study time. Once you have a core study time scheduled, treat it the same way you treat other scheduled activities. If you have a concert or a basketball game you are a part of, you don't tell your friends you're free to hangout during those times.

### WHERE:

Have a consistent study location. A place in your room/house, the library, a coffee shop, a classroom, etc. Somewhere you can focus with minimal distractions.  
If possible, have it be a different location than where you relax or have fun.  
Keep your study/work location clean. Aside from the organizational benefits, having a clean workspace reduces stress and improves focus.

### HOW:

If you are working through relatively unknown material, having a set procedure to approach the material is very helpful. The [SPQR<sup>3</sup>](#) and the [PQRST](#) are both good methods to use, especially for textbooks.

Taking notes is an important baseline for processing new information. [There are many ways to organize your notes.](#)

Make use of all your resources! Email your teacher questions, see if your school or library offers any free tutoring or homework help, use google/youtube to find other sources of instruction, use khan academy, etc.

Rewrite/review your notes. Your first set of notes is usually not as efficient as possible since the information was still new. Re-writing it lets you summarize the information more efficiently, and has you think about how the information should be organized, which means you're building those same connections and structures in your brain.

Flash cards and spaced-repetition. This is especially effective for pure memorization. Using flashcard programs like quizlet or anki help to change the frequency with which you see terms to optimize memorization.

Take breaks. Aim for a solid 50 minutes of focused studying and then a 5 minute break. Don't let your break go out of control. Set a timer. If you know going on your phone will be too large a distraction, then don't use it. Stand up and stretch, go for a walk, grab a quick snack, listen to a song or two that you like, practice a bit of mindfulness meditation, but whatever you do with your break, remember your goal is to be refreshed to continue studying.

Reward yourself for completing assignments or for staying focused during a study session. Something as simple as candy or a snack that is only for such rewards serves as positive feedback to help condition your brain to associate properly studying with good feelings.

Study in groups if you can. An effective study group can boost your study productivity massively. Help each other understand parts that the other finds confusing, share resources you've found, and keep each other focused. Disclaimer: Be realistic about who you study with. Only study with people you know will be more helpful than distracting.

Multimodal learning. Contrary to popular belief, focusing on just your preferred learning style (visual, auditory, etc.) isn't the best way to learn. The best way is to incorporate multiple learning styles in order to diversify the way your brain can process the new information. Read, write, watch, and talk about the thing you're learning.

Discipline over Motivation (although motivation helps too). A good shot of motivation is great for starting something, but it can disappear quickly. It is more important to build good study habits through discipline. When you have a good study schedule and the tools and skills necessary, then whether or not you feel like it, the habits built through repetition will push you through.

Good support. Share your study journey with someone you trust to be supportive. A parent/guardian, a teacher, or a friend who is also studying. Share the victories as well as failures!

## 4. MATH SPECIFIC STUDY TIPS

### **SHOW YOUR WORK. And keep it clean!**

From a grading perspective, writing out your work shows your teacher what your process was and also opens up the door for partial credit

From a learning perspective, showing your work is an exercise of perfect practice makes perfect. Learning and practicing the in-between steps for a math problem is the same as a basketball player learning each step and motion for proper shooting form or a pianist going section by section through a piece they are learning. If you rush and skip steps in the learning process, then when you try to perform it at speed, you're bound to make mistakes.

### **No shortcuts until the base skill is easy.**

Similar to the first tip, while you're learning, write out all of the steps, even if you know how to solve it faster. It's much more difficult to pinpoint your mistakes if you skip steps. Until you can solve a question over and over correctly with no mistakes, don't skip any steps.

### **Fill the gaps in your fundamentals.**

Math concepts build on each other from year to year. If you get pushed on to geometry while your algebra skills are poor, then geometry becomes significantly more difficult. If you're solving quadratic functions while still needing to pause to do your times or divisions tables, then every step will feel painful. Every time that you move ahead without mastering the current skills or remediating the previous ones, math only becomes more difficult.

### **Practice is key.**

Learning math requires practice. There's no way around it. Compared to say a history or biology class where you are expected to memorize information, math is something you are expected to do. Solve this equation, or apply this formula. Math isn't something you can watch someone do, then expect that you yourself have mastered.

### **Get expert help.**

Ask for help from your teacher, an upperclassman, or a tutor when you need it. In some ways learning math is similar to learning a new language. If you're learning French, you need someone who knows the language to tell you if you're on the right track. You need to know if your vocabulary is correct or if you're using the correct sentence structure. Having someone who can point you in the correct direction can save hours of study time.

### **Calculators**

Calculators are a valuable tool, but they are only as smart as the person using them. A calculator is useless if you can't even figure out what the question is asking or what formula you need to know

### **Visuals and applications**

A lot of students suffer because they lose the ability to visualize the math they are working with. Pretty much all math can be visualized. If you're struggling with understanding a new concept, start with looking up how it can be visualized and what some word problems with applications are.

## 5. HOW TO TAKE NOTES

The purpose of taking notes is two-fold. The first is to summarize the information you're learning so that it's easier to go back and read it later. The second is that by writing out the information, summarizing major points, and thinking through how to organize the information, you are studying the information already.

Familiarize yourself with [different note-taking structures](#). Different note-taking styles have their pros and cons. Know which you prefer.

Label and color code your notes. Labels make it easy to find what section or page of your notes you are looking for. Using different colored pens or highlighters to categorize different types of information in your notes is a good way to help your eyes quickly scan for the type of information you are looking for when reviewing. Alternatively you can underline, box, or use different symbols to mark your notes.

Rewrite your notes. Sometimes you have to write your notes quickly in class, or you weren't sure how to organize the information the first time around while studying. Taking the time to rewrite your notes lets you clean up and organize them, and more importantly it makes you reprocess all of the information.

Try to keep your notes short and sweet. You don't want to be rewriting your textbook. Only write what you need to remember. Also, you don't always need to write your notes in perfect grammar. Short-handing words and using phrases instead of sentences is fine as long as it helps you remember the information.

Create visuals/mnemonics. ROYGBIV, PEMDAS, and the fifty states song are all great examples of using creative tools to memorize information. In your notes, draw pictures or add references to movies, games, or shows. Whatever helps you remember the information. These tricks don't have to make sense to anyone but you.

Handwritten or Typed. For some students writing notes out by hand helps them internalize the information better. For others, typing helps more. Know which one helps you most. Typing might be faster, but it doesn't matter how fast you type the notes if it doesn't help you study at all. It's also an option to type them first, then hand write them later.

Keep your final set of notes clean and organized. Notes are useless for studying if you can't read them later. The more cluttered and difficult it is to read your notes, the less inclined you will be to use them to study as well. A tip for math specifically, is to keep your notes/examples separate from your assignments.

Review your notes as soon as possible. If you tend to take notes in-class, then try to spend just 2-3 minutes as soon as you get home reviewing them. Let your brain know that this information is important by revisiting it as soon as possible. Do this especially for classes where you feel like you forget everything you learned by the next day.

## 6. PREPARING FOR A TEST

### **Know the scope of the test.**

Is it on chapters 3-5? Is it based on powerpoints? Make sure you know where the content for the test is being pulled from. Don't waste time studying something that won't be on the test. Ask your teacher if you're not sure.

### **Gather all your resources.**

Old homeworks, quizzes, and tests are a great place to start. Your own notes or teacher-provided notes. (If you don't take notes, start taking notes!) Find resources online like flashcards, videos, and tests from other teachers on the same topic.

### **Prioritize what you need to study most.**

Studying something you already know feels nice, but it doesn't get you more points on your test. Tackle the more difficult subjects or parts of a chapter first.

### **Study in chunks.**

Spend 30-50 minutes studying, then take a short break. When you come back from the break, spend 5-10 minutes reviewing before moving forward. Then on your next study session, start off by reviewing the information you studied previously. Give your brain some breathing room to file information away. The quick review helps your brain retain the information before adding new things on top of it.

### **Practice.**

This is especially important for math-based subjects. You can't learn math by watching someone else do math. Practice interpreting questions, applying the correct formulas, and writing out the steps. If you can't answer a question correctly without help outside of the test, you're not going to magically get it correct on the test.

### **Don't trick yourself into thinking you know something when you don't.**

A lot of students will read off of their notes or watch a video once and recognize the information and think that means they have it all memorized and understood. But as soon as you take away those references, their memory is "fuzzy", and they can't quite answer similar questions. You need to make sure you can recall the information without help. And for math subjects you need to make sure you can both recall the information AND properly apply it. You aren't being tested on whether or not a youtuber can do a math question, you're being tested on whether or not you can.

### **Give yourself enough time.**

Don't put yourself in a position where you need to cram the night before a test. Your memory works best through spaced repetition. Learn something, practice it, give your brain some time to process it and file it properly, and then practice it again to build on that file. Even just one extra day is extremely helpful in giving your brain enough time to process and internalize the information you are throwing at it.