

# Active Learning Strategies for Effective Studying

You've been taught to study, but you may not know exactly how to study. Studying is most effective when spaced out into several short, intense sessions with active strategies (rather than passive strategies like rereading your notes). These strategies will help you study smarter, not harder!

## THE STRATEGIES



### Generation – More Than Guessing

Try to figure out a concept or the answer to a problem before attending your lecture. The effort you put in while struggling with the solution will pay off with better learning during class.



### Elaborate in Your Own Words

When reviewing content after class, try writing or explaining the new material in your own words or relating it to something you already know. Creating your own concrete or realistic examples can add meaning to abstract topics and increase the number of connections in your brain for easier recall later.



### Two is Better Than One

The more connections you make with information learned, the easier it is to remember later. Text and writing are one path, and pictures, graphs, and other visuals provide a second path. You don't have to be an artist to do this – find pictures online, make a timeline or chart, or draw arrows to connect ideas.



### Reflection

Within 24 hours of class, try to write down everything you remember from lecture without using any other materials. Visualize the class and ask yourself questions about what you learned, then go back and fill in the gaps using your notes or other materials.



### Retrieval vs. Rereading

When studying, you can retrieve information in your brain by quizzing yourself with flashcards, creating a study guide, working practice problems, or making concept maps. Rereading is a passive strategy that creates feelings of fluency in the short term but doesn't help with retrieval in the long term. Remember to “practice like you play” – your test will ask you to answer questions, not reread your notes.



### Spaced Out Sessions

Studying longer is not necessarily better – your brain loses focus and needs a break after 30-45 minutes. Time between study sessions also allows your brain to process information and find connections, which helps you retain the information in the long term.



### Interleave Your Practice

On an exam, the order of questions is usually random, not grouped by type. Practice with a mixed set of problems or shuffle your flashcards in a different order each time. This variety helps you see larger patterns among concepts and determine similarities and differences among problem types.



## Calibration

One of the best ways to determine what you know compared to what you don't know is to take a practice test. Review the answers you missed, then focus your studying on the unfamiliar concepts.



## Mnemonics

Once you have a deep understanding of a concept, mnemonics can help you recall large amounts of information or specific formulas. We often remember these phrases long after we need them (e.g., "Never Eat Soggy Waffles" for compass directions)!



## Become the Teacher

Try teaching the course material to someone else. This strategy involves retrieval from memory and elaborating in your own words, both of which help strengthen the connections in your brain.

## TRY IT OUT!

Pick three strategies above and describe how you could use them in your courses.

### Strategy 1

### Strategy 2

### Strategy 3