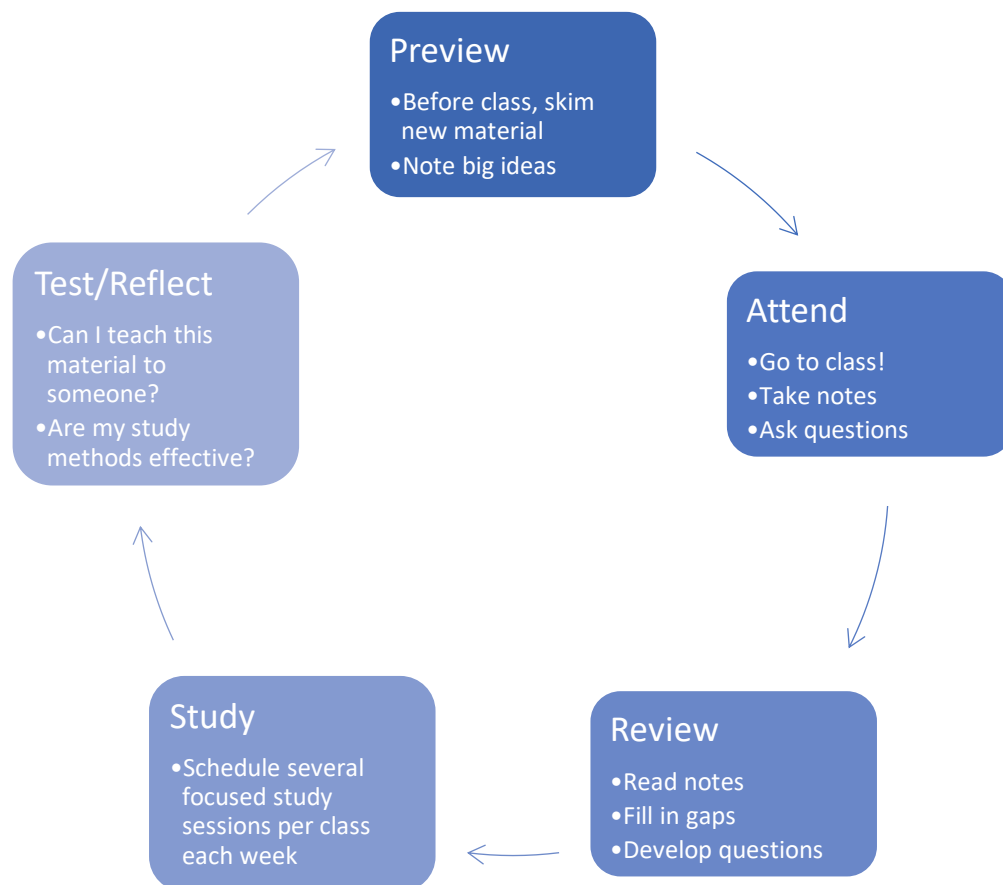


Improve Your Processing; Improve Your Studying

1. **Build effective studying into your everyday life.** The steps of the Study Cycle, depicted in the figure below, may seem obvious at first. However, many students take shortcuts or skip steps entirely, which may save time in the short run, but creates more challenges in the long term.

Intentionally participating in each step of the study cycle will help you engage more deeply with course material, spread out your learning, and avoid having to cram before exams. (See the end of this document for more information and resources about the Study Cycle.)



2. **Ask yourself metacognitive questions as you read and review materials.** The term “metacognition” refers to thinking about what you think and learn. Metacognition is helpful because it’s important to learn not just *that* you understand something, but also *why* you understand it and *how* you came to that understanding.

Reflecting on your own learning can help you determine which study strategies are most effective. Here are some examples of metacognitive questions you can ask yourself while you're reading and studying:

- How did I get to this answer?
- How do I know my answer is correct?
- Does this answer make sense given the information provided? Why or why not?
- What did I hear/read that conflicts with my prior understanding?
- How did what I just heard/read relate to what I studied previously?
- What questions are popping up during class and when I study?

3. **Interleave your study topics instead of focusing on one class or concept for an extended period of time.** Interleaving can help you form connections between concepts, spot patterns, and solve problems more efficiently.

By interleaving the types of practice problems you complete, you force yourself to remain actively engaged and ask questions like “what kind of problem is this?” and “which concept or formula do I think would be most appropriate to apply, and why?” Although it might initially take you a little longer to complete practice problems this way, you'll likely find over time that you're able to learn more information in a shorter period of time, which leaves you with more time and energy for other things.

4. **Increase your learning potential by building upon previous knowledge.** Use concepts you already know (even if unrelated) to make information relevant to you. You can also come up with concrete examples of new concepts to help them seem less abstract. If you're struggling to think of appropriate examples or you're not sure you're on the right track, check with your instructor, TA/AI, or a friend who is knowledgeable about the material.
5. **Engage in retrieval practice.** Retrieval practice is a study technique where you practice bringing learned information to mind in order to increase retention; in other words, instead of focusing on cramming information *into* your brain, you focus on getting that information back *out*. Common strategies for retrieval practice include:

- **Comprehension check right after reading or studying:** Without looking at your notes, write down everything you remember and then go back and check to see which concepts you remembered well, and which ones need more review
- **Quizzing yourself or having a friend quiz you:** Practice exams and reading comprehension questions in your textbooks can be great places to find quiz questions
- **Teaching the information to someone else** (or to yourself in the mirror!)
- **Learning or inventing mnemonic devices:** These can include rhymes, acronyms, or visualizations that help you remember key concepts

6. **Use flashcards to learn vocabulary and key concepts.** Flashcards are another great tool for retrieval practice, and they're easy to study in short bursts throughout the day. When studying with flashcards, remember to shuffle your deck often and resist the temptation to remove cards from rotation too early. Also, think or say your whole answer before you flip the card over to check your accuracy; this will help ensure that you are actually learning, as opposed to experiencing an illusion of learning because the words on the cards have become more familiar to you.
7. **Enhance your notes with visuals.** This is called "dual coding" and research has shown that linking verbal or written information with written information increases retention. That means it's worth taking the time to draw diagrams or sketches that are relevant to a lesson, or you could create your own visuals by drawing a concept map, comic, timeline, etc.
8. **Read and re-read with purpose.** Re-reading alone is not studying; it can trick you into thinking you understand, but re-reading only increases your fluency with the material, not your understanding of it.

Effective ways to re-read:

- Re-read with the mindset that you'll be teaching the information to someone else.
- Re-read with the intention of identifying learning objectives or key ideas.
- Assess your knowledge of the material and identify area for improvement. Then, re-read to address those knowledge gaps.

Additional resources and further reading:

- [The Learning Center Academic Skills Series: Study Skills](#) [video]
- [The Study Cycle: LSU Center for Academic Success](#) [video]
- [Note-Taking Strategies](#)
- [Study Strategies for Success](#)
- [Six Strategies for Effective Learning: The Learning Scientists](#)
- *Study skills apps:*
 - [Pocket App](#)
 - [Focus@Will](#)
 - [Quizlet](#)

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