

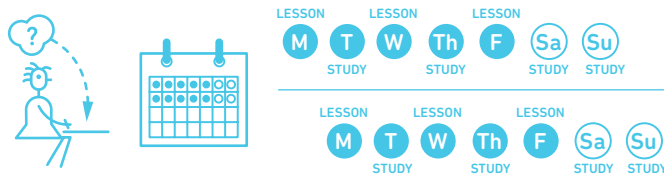
Six Strategies for Effective Learning

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All of the strategies below have supporting evidence from cognitive psychology and are highly relevant to medical students who need to learn vast amounts of information. For each strategy, we explain how to do it and point to the relevant literature. For more information and resources, visit the The Learning Scientists website.¹

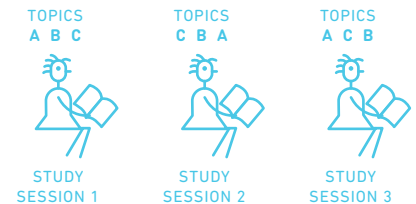
1 PLAN OUT YOUR STUDY SESSIONS²

Spaced Practice



Space out your studying over time.
Make a plan and stick to it!

Interleaving



Switch between ideas while you study.
Don't study one idea too long!

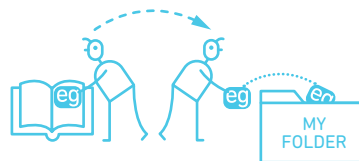
2 DURING STUDY TIME, MAKE SURE YOU UNDERSTAND THE MATERIAL³

Elaborative Interrogation



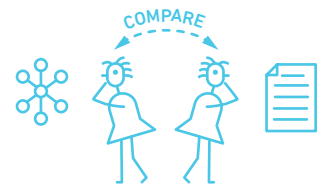
Ask yourself questions while you study about how and why things work, and then find the answers. Also try this with a partner.

Concrete Examples



Collect examples of abstract ideas, and make the link between the idea you are studying and each example.

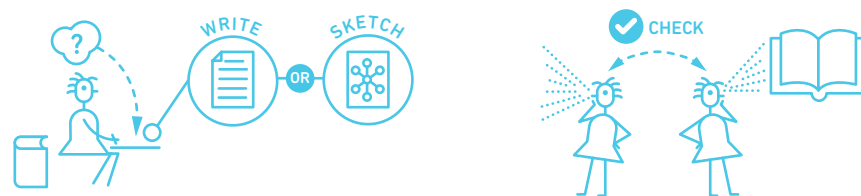
Dual Coding



Combine words and visuals, and compare the two formats.

3 PUT AWAY YOUR CLASS MATERIALS AND WRITE OR SKETCH WHAT YOU KNOW⁴

Retrieval Practice



Put away your class materials, and write or sketch everything you know. Be as thorough as possible. Then, check your class materials for accuracy and important points you missed. You can also practice retrieval by taking practice tests. Ask your instructor or make your own and swap with a peer.

References:

1. The Learning Scientists website. <http://www.learningscientists.org>. Accessed November 9, 2017.
2. Benjamin AS, Tullis J. What makes distributed practice effective? *Cogn Psychol*. 2010;61:228-247.
3. Pashler H, Bain PM, Bottge BA, et al. *Organizing Instruction and Study to Improve Student Learning*. IES Practice Guide. Washington, DC: Institute of Education Sciences; 2007.
4. Roediger HL III, Putnam AL, Smith MA. Ten benefits of testing and their applications to educational practice. In: Mestre J, Ross B, eds. *Psychology of Learning and Motivation: Cognition in Education*. Oxford, UK: Elsevier; 2011:1-36.



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