The University of Texas at Austin
Sanger Learning Center
School of Undergraduate Studies

Levels of Learning

On college exams, you will be asked questions at varying levels of complexity. Self-quiz at multiple levels of learning when you are preparing for an exam.

increasing complexity ↓

	Level	Typical Words Used	Examples
1	**Remember:** Recall fundamental knowledge: concrete facts, dates, definitions, etc.	Name, identify, label, define, match, recall, recognize, sort	**History:** When was the 4th Amendment ratified? **Biology**: What does DNA stand for? **Math:** Define derivative in terms of the difference-quotient.
2	**Comprehend/ Understand:** Give the meaning and/ or significance of facts and events. Be able to explain or summarize ideas.	Explain, discuss, generalize, give examples, interpret, restate, summarize	**History:** Explain the meaning of the 4th Amendment. **Biology:** Discuss the role of DNA in protein synthesis. **Math:** What does the derivative represent with respect to the graph of the original function?
3	**Apply:** Use your understanding of a subject to address a new situation.	What if, apply, demonstrate, hypothesize, imitate, predict, relate, show, solve, use	**Biology:** What if a single base pair were deleted from the coding region of a gene? **History:** What sorts of realities may have gone into drafting the 4th Amendment? **Math:** Find the equation of the tangent line to the graph of $f(x) = x^2$, at the point (1, f(1))
4	**Analyze:** Compare one subject's parts, characteristics, overall meaning, with another.	Analyze, break down, contrast, discriminate, outline	**History:** Analyze some common issues between Amendments 3, 4, and 5. **Biology:** What is the significance of DNA strands being antiparallel? **Math:** What does each term in the difference-quotient definition of the derivative represent graphically?
5	**Evaluate:** Critique or judge a subject, based on its own attributes, and on the ways in which it compares with other subjects.	Argue, assess, compare, decide, evaluate, persuade, rate, support, verify	**History:** Argue which Amendment is most relevant to modern society. **Biology:** Develop an argument against splicing insecticidal genes into the corn genome. **Math:** Why is the derivative also said to represent "instantaneous rate of change" and how does this definition compare with the "slope of a tangent line" definition?
6	**Create:** Design or invent a new model, scenario, or project based on the subject you've learned.	Adapt, combine, compose, design, imagine, plan, synthesize, transform	**History:** Argue for or against warrantless wiretapping, based on the 4th Amendment. **Biology:** Imagine a single-gene splice that would create an interesting fish for the pet trade. **Math:** The commonly used difference-quotient definition is not unique. Give another representation for the notion of the derivative and sketch a graph labeling the parts of this representation.

Now it's your turn...

Use what you've discovered about levels of learning to 1) prepare for a test and 2) analyze your results.

Learning task	**Before the test: Self-test** What questions do you expect on the test? Find, create, and share questions at those levels.	**After the test: Analyze** Go through your returned test. Identify the level of each question, and whether you lost any points.
Remember		
Understand		
Apply		

Answer questions to determine which levels you find most difficult.

Match how you study to the level. For example:

- To remember, make flash cards or create mnemonics.
- To understand, summarize concepts, or teach material to a friend.
- To apply, use what you've learned to solve problems.

Practice producing (writing, saying) information, not just looking over your notes.

Look for patterns in the questions you answered correctly. This can help you identify your strengths.

Next, search for possible patterns in the questions you lost points on:

- Do they tend to be at a particular level?
- Are they from a particular source (lecture, book, discussion section, homework, etc.)?

Use what you've found to pinpoint which levels and/or sources to study more for future exams.

For more info on classification of the cognitive domain, see:
Lorin W. Anderson, David R. Krathwohl et al (eds.) A Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Educational Objectives. New York: Longman, 2001.