

Critical Analysis and Reasoning Skills

What Will the Critical Analysis and Reasoning Skills Section Test?

The Critical Analysis and Reasoning Skills section of the MCAT exam will be similar to many of the verbal reasoning tests you have taken in your academic career. It includes passages and questions that test your ability to understand what you read. You may find this section unique in several ways, though, because it has been developed specifically to measure the analysis and reasoning skills you will need to be successful in medical school. The Critical Analysis and Reasoning Skills section achieves this goal by asking you to read and think about passages from a wide range of disciplines in the social sciences and humanities, followed by a series of questions that lead you through the process of comprehending, analyzing, and reasoning about the material you have read.

Critical Analysis and Reasoning Skills passages are relatively short, typically between 500 and 600 words, but they are complex, often thought-provoking pieces of writing with sophisticated vocabulary and, at times, intricate writing styles. Everything you need to know to answer the test questions is in the passages and the questions themselves. No additional coursework or specific knowledge is required to do well on the Critical Analysis and Reasoning Skills section, but you, as the test taker, may find yourself needing to read the passages and questions in ways that are different from the reading required in the textbooks you used in most prehealth courses or on tests like the SAT Critical Reading exam. Passages for the Critical Analysis and Reasoning Skills section — even those written in a conversational or opinionated style — are often multifaceted and focus on the relationships between ideas or theories. The questions associated with the passages will require you to assess the content, but you will also need to consider the authors' intentions and tones and the words they used to express their points of view.

This section is designed to:

- Test your comprehension, analysis, and reasoning skills by asking you to critically analyze information provided in passages.
- Include content from ethics, philosophy, studies of diverse cultures, population health, and a wide range of social sciences and humanities disciplines.
- Provide all the information you need to answer questions in the passages and questions themselves.

Test Section	Number of Questions	Time
Critical Analysis and Reasoning Skills	53 (note that questions are all passage-based)	90 minutes

Critical Analysis and Reasoning Skills Distribution of Questions by Critical Analysis and Reasoning Skill and Passage Content in the Humanities and Social Sciences

You may wonder how many questions you'll get testing a particular critical analysis and reasoning skill or how many humanities or social science passages you'll see on the test. The questions you see are likely to be distributed in the ways described below. (These percentages have been approximated to the nearest 5% and will vary from one test to another for a variety of reasons, including, but are not limited to, controlling for question difficulty, using groups of questions that depend on a single passage, and using unscored field-test questions on each test form.)

Critical Analysis and Reasoning Skill:

- Foundations of Comprehension, 30%
- Reasoning Within the Text, 30%
- Reasoning Beyond the Text, 40%

Passage Content:

- Humanities, 50%
- Social Sciences, 50%

What Is the Content of the Passages in the Critical Analysis and Reasoning Skills Section?

Passages in the Critical Analysis and Reasoning Skills section are excerpted from the kinds of books, journals, and magazines that college students are likely to read. Passages from the social sciences and humanities disciplines might present interpretations, implications, or applications of historical accounts, theories, observations, or trends of human society as a whole, specific population groups, or specific countries.

Of these two types of passages (social sciences and humanities), social sciences passages tend to be more factual and scientific in tone. For example, a social sciences passage might discuss how basic psychological and sociological assumptions help scholars reconstruct patterns of prehistoric civilizations from ancient artifacts. Humanities passages often focus on the relationships between ideas and are more likely to be written in a conversational or opinionated style. Therefore, you should keep in mind the tone and word choice of the author in addition to the passage assertions themselves. Humanities passages might describe the ways art reflects historical or social change or how the philosophy of ethics has adapted to prevailing technological changes.

Critical Analysis and Reasoning Skills passages come from a variety of humanities and social sciences disciplines.

Humanities

Passages in the humanities are drawn from a variety of disciplines, including (but not limited to):

- Architecture
- Art
- Dance
- Ethics
- Literature
- Music
- Philosophy
- Popular Culture
- Religion
- Theater
- Studies of Diverse Cultures[†]

Social Sciences

Social sciences passages are also drawn from a variety of disciplines, including (but not limited to):

- Anthropology
- Archaeology
- Economics
- Education
- Geography
- History
- Linguistics
- Political Science
- Population Health
- Psychology
- Sociology
- Studies of Diverse Cultures

[†] Depending on the focus of the text, a Studies of Diverse Cultures passage could be classified as belonging to either the Humanities or Social Sciences.

What Kinds of Analysis Skills Does the Critical Analysis and Reasoning Skills Section Require?

The Critical Analysis and Reasoning Skills section assesses three broad critical analysis and reasoning skills. Questions in this section will ask you to determine the overall meaning of the text, to summarize, evaluate, and critique the “big picture,” and to synthesize, adapt, and reinterpret concepts you processed and analyzed. The questions that follow Critical Analysis and Reasoning Skills passages lead you through this complex mental exercise of finding meaning within each text and then reasoning beyond the text to expand the initial meaning. The analysis and reasoning skills you will be tested on mirror those that mature readers use to make sense of complex materials. The skills assessed in the Critical Analysis and Reasoning Skills section are listed below, and each skill is explained in the following sections.

Critical Analysis and Reasoning Skills

Foundations of Comprehension

- Understanding the basic components of the text
- Inferring meaning or intent from immediate sentence context

Reasoning Within the Text

- Integrating distant components of the text to infer an author's message, intent, purpose, belief, position, bias, assumptions
- Recognizing and evaluating arguments and their structural elements (claims, evidence, support, relations)

Reasoning Beyond the Text

- Applying or extrapolating ideas from the passage to new contexts
- Assessing the impact of incorporating new factors, information, or conditions on ideas from the passage

Foundations of Comprehension

The topics of some passages in the Critical Analysis and Reasoning Skills section will be familiar; some will not. Explanations, illustrative examples, and definitions of significant specialized terms in these passages will help you develop the strong basic foundation needed for answering all the questions you encounter in this section of the MCAT exam. Questions that test Foundations of Comprehension rely on many of the same activities required for Reading Within the Text questions. One key difference is in the scope of the information needed to answer the question. The Foundations of Comprehension questions mainly focus on inferring meaning or intent from an immediate sentence context.

Additionally, some questions may ask you about the overall meaning of information in the passages or the author's central themes or ideas; others may ask you to select the definitions of specific words or phrases as they are used in context. These kinds of questions help you build the foundation that will allow you to think in new ways about concepts or facts presented in the passages. Paragraph numbers may be included in questions to help you locate relevant portions of the text.

Two sets of skills are the basis of the Foundations of Comprehension questions on the Critical Analysis and Reasoning Skills section.

Understanding the Basic Components of the Text

The most fundamental questions on the Critical Analysis and Reasoning Skills section ask about the basic components of the passages. Comprehension questions at this level may ask you to provide a general overview of the passage or to focus on specific portions of the text. You may be asked to recognize the literal meaning of a particular word or phrase. You may be asked to identify the author's thesis, the main point or theme of the passage, or specific examples. In responding to these questions, you need to be able to recognize the purpose of particular sentences and rhetorical labels such as "for example," "therefore," or "consequently."

Inferring Meaning or Intent From Immediate Sentence Context

Questions may also require you to infer meanings that can't be determined from a literal reading of the text, such as meanings the author has implied but did not state directly. Comprehension questions at this level may ask you to interpret the meaning of words or expressions, or the author's intent, using the immediate sentence context. These questions may ask you to interpret rhetorical devices or word choice. Or, you may have to consider how the author has structured the text — for example, through cause-and-effect relationships for discussions in the behavioral sciences, chronologically for historical discussions, or point-and-counterpoint for political science pieces. Identifying the basic structure should help you understand the passage and determine its general purpose.

You may also need to attend to specific subtle and nuanced rhetorical decisions an author has made to shape his or her ideas, arguments, or discussions and perhaps to complicate a passage's meaning. For example, questions may ask you to explain a highlighted word or phrase or an unexpected transition in ideas. To answer these questions, look for clues in the context around the specific sections of the passage. An author's choice about tone (e.g., humorous, authoritative, satirical) also contributes to — or obscures — meaning, and tone can often communicate the purpose for which a passage is written (e.g., to persuade, instruct, inform, entertain). For example, a satirical piece may at first seem merely entertaining, but a closer examination often reveals that its purpose is actually to persuade.

Some questions at this level may ask about information not specifically stated in the passage, and you must make assumptions based on what the author merely hints at through his or her use of connotative language or figures of speech.

The beginning and ending of passages are two specific sections where the author often provides important information about the general theme, message, or purpose for the work. Does the author state their main point in an introductory or closing sentence? Does the passage end with a definitive solution, a partial resolution, or a call for additional research? Does it end with a dramatic rhetorical statement or a joke that leaves unanswered questions? Again, considering these specific sections can help inform your basic understanding of the passage.

Reasoning Within the Text

Questions that test Reasoning Within the Text rely on many of the same activities required for Foundations of Comprehension questions. One key difference is in the scope of the information needed to answer the question. The Foundations of Comprehension questions mainly focus on inferring

meaning or intent from an immediate sentence context. Questions that test Reasoning Within the Text differ from those assessing Foundations of Comprehension in that they ask you to integrate distant passage components into a more generalized and complex interpretation of passage meaning.

It's important to remember that Reasoning Within the Text questions do not ask you to provide your own personal opinion. You may, in fact, disagree with the author's overall conclusion yet find that the conclusion is a reasonable inference from the limited information provided in the passage. If you happen to know some obscure fact or anecdote outside the scope of the passage that could invalidate the author's conclusion, ignore it. The content of the passage or new information introduced by the questions should be the only sources you base your responses on.

Two sets of skills are the basis of the Reasoning Within the Text questions on the Critical Analysis and Reasoning Skills section.

Integrating Distant Components of the Text

Many questions that test Reasoning Within the Text skills require you to integrate distant components of the text to infer meaning or intent. You may be asked to determine an author's message, purpose, position, or point of view. This may also extend to inferring their beliefs, noticing their assumptions, and detecting bias. When it is not directly stated in any single sentence, you may be asked to infer what the author's main thesis might be. You may be asked to consider whether each section of text contributes to a sustained train of thought, as opposed to presenting an isolated detail or digressing from the central theme. You may be asked about paradoxes, contradictions, or inconsistencies that can be detected across different parts of the passage. You will also need to be able to recognize when an author presents different points of view within the passage.

To infer the author's beliefs, attitudes, or bias, look for clues in the tone of the passage, in the author's use of language or imagery, and in the author's choice of sources. To determine the author's position, look for their expressed point of view. Carefully consider the extent to which the author uses summaries or paraphrases to introduce others' points of view. It's very important to attend to perspective: Does the author present their own perspective, or do they use verbatim quotations or restatements from the perspective of other sources? You may be asked to identify points of view, other than the author's, presented indirectly through the author's summaries or paraphrases.

Recognizing and Evaluating Arguments

Questions assessing Reasoning Within the Text will also require you to understand how the different parts of the passage fit together to support the author's central thesis. Some questions will direct your attention to an argument, claim, or evidence presented in the passage and then ask you to evaluate it according to specific criteria. The criteria could be the logic and plausibility of the passage text, the soundness of its arguments, the reasonableness of its conclusions, the appropriateness of its generalizations, or the credibility of the sources the author cites. The questions require you to dig beneath the passage's surface as you examine the presence or absence of evidence, the relevance of information, and faulty notions of causality and to determine the significance of and relationships among different parts of a passage. Some questions may require that you analyze the author's language,

stance, and purpose. For example, plausible-sounding transitional phrases may in fact be tricky. If read quickly, the words appear to make a legitimate connection between parts of a passage; however, when subjected to scrutiny, the links they appear to have established may fall apart.

The skills required to answer both types of Reasoning Within the Text questions may sound like a long list of possible critical and analysis skills to have mastered, but they are skills you probably already have and use every day. Similar to your reactions when you hear someone trying to convince you about something, persuade you to think a particular way, or sell you something, these questions often invite you to doubt and then judge the author's intentions and credibility. Questioning an author is a legitimate and often necessary analysis strategy that can serve test takers well when making sense of complex text. Answering these questions requires looking beyond contradictions or omission of facts or details to find clues such as vague or evasive terms or language that sounds self-aggrandizing, overblown, or otherwise suspect within the context of the passage. Credible sources — essayists, scientists, lecturers, even pundits — should be both authoritative and objective and should clearly demonstrate expertise. Blatant, one-sided arguments and rigid points of view are easy to identify, but some authors are more nuanced in presenting biased ideas in the guise of objectivity. The key to identifying bias lies in identifying the author's *treatment* of ideas, which you achieve by analyzing and evaluating different aspects of the passage. For example, an author who uses demeaning stereotypes or derogatory labels is not likely to be a source of objective, judicious analysis.

Reasoning Beyond the Text

The final category, Reasoning Beyond the Text, requires you to use one of two analysis or reasoning skills, which in a way can be thought of as two sides of a single coin. Questions assessing the first set of skills ask you to *apply or extrapolate* information or ideas presented in the passage to a new or novel situation — for example, extending information the author presents beyond the actual context of the passage.

The second set of skills involves considering new information presented in a test question, mentally *integrating* this new information into the passage content, and then *assessing* the potential impact of introducing the new elements into the actual passage. Reasoning about new, hypothetical elements should cause you to synthesize passage content anew and alter your interpretation of the passage in some plausible way.

Application and integration questions elicit some of the same kinds of thinking. Both types deal with changes caused by combinations or comparisons, and both test your mental flexibility. They do differ, however, and their distinct requirements are explained in more detail below. Remember, though, that as with questions assessing different levels of analysis and reasoning, you must still use only the content of the passages and the new information in the questions to determine your answers. Keep avoiding the temptation to bring your existing knowledge to bear in answering these questions.

Applying or Extrapolating Ideas From the Passage to New Contexts

Virtually all questions assessing application or extrapolation skills ask you how the information or ideas presented in the passage could be extended to other areas or fields. This is the kind of high-level analysis and reasoning skill scientists or theoreticians use when they consider a set of facts or beliefs and create new knowledge by combining the “givens” in new ways. Of course, these combinations may or may not result in a successful combination or outcome.

For each application question, the passage material is the “given,” and the test question provides specific directions about how the passage information might be applied to a new situation or how it might be used to solve a problem outside the specific context of the passage. As the test taker, your first task is to analyze the choices offered in the four response options so that you can gauge the likely outcome of applying the existing passage content to the specified new context. Each response option will yield a different result, but each test question has only one defensible and demonstrably correct response option.

The correct answer is the one option that presents the most likely and most reasonable outcome, based only on the information provided in the passage and the question. The questions do not assess your personal ability to apply information or solve problems, only your ability to apply information from the question to the passage you have read. For example, if a question asks you to determine the author’s likely response to four hypothetical situations, you would choose the response most consistent with what the author has already said or done according to the text of the passage. In determining the correct response, rule out the options that do not fit or are incongruent with the context (e.g., framework, perspective, scenario) created by the passage material.

Application questions sometimes require selecting a response option that is most *analogous* to some relationship in the passage. Here the parameters are broad. *Likeness* is measured not by inherent similarity but by analogy. Questions dealing with analogies test the ability to identify a fundamental common feature that seemingly different things or processes share. This may sometimes require translating a figurative comparison into equivalent sets of literal terms. However, the task always requires looking beneath surface imagery to discern underlying relationships or paradigms.

Assessing the Impact of Incorporating New Factors, Information, or Conditions on Ideas From the Passage

The essential difference between application and incorporation skills is that the two-part purpose of incorporation questions is to introduce a specific piece of information for you to consider and ask you to assess how ideas in the passage might be affected by its introduction. The premise of these questions is that ideas and information in the passages are potentially malleable, not a fixed framework, as in application questions.

In some incorporation questions, you must find the best answer to a “what if” question by reinterpreting and reassessing passage content with the additional fact or idea introduced by the question. Does the new information support or contradict the inherent logic of the passage? Could the new information coexist with what is already in the passage, or would it negate an aspect of the

author's argument? If the latter is the case, the question could ask what modifications or alterations might need to be made to the passage content to accommodate the new element introduced by the question. Remember, the passage should be considered malleable.

Other forms of incorporation questions may ask you to think about a possible logical relationship that might exist between the passage content and the facts or assertions included in the answer options. The task is to select the one option that, if added to the passage content, would result in the *least* amount of change. The correct response option will present the situation or argument that is most similar to what is outlined in the passage. In other words, you must determine which new fact or assertion would least alter the central thesis the passage has developed.