

The Praxis® Study Companion

Middle School: Content Knowledge

5146



Welcome to the *Praxis*® Study Companion

Prepare to Show What You Know

You have been working to acquire the knowledge and skills you need for your teaching career. Now you are ready to demonstrate your abilities by taking a *Praxis*® test.

Using the *Praxis*® Study Companion is a smart way to prepare for the test so you can do your best on test day. This guide can help keep you on track and make the most efficient use of your study time.

The Study Companion contains practical information and helpful tools, including:

- An overview of the *Praxis* tests
- Specific information on the *Praxis* test you are taking
- A template study plan
- Study topics
- Practice questions and explanations of correct answers
- Test-taking tips and strategies
- Frequently asked questions
- Links to more detailed information

So where should you start? Begin by reviewing this guide in its entirety and note those sections that you need to revisit. Then you can create your own personalized study plan and schedule based on your individual needs and how much time you have before test day.

Keep in mind that study habits are individual. There are many different ways to successfully prepare for your test. Some people study better on their own, while others prefer a group dynamic. You may have more energy early in the day, but another test taker may concentrate better in the evening. So use this guide to develop the approach that works best for you.

Your teaching career begins with preparation. Good luck!

Know What to Expect

Which tests should I take?

Each state or agency that uses the *Praxis* tests sets its own requirements for which test or tests you must take for the teaching area you wish to pursue.

Before you register for a test, confirm your state or agency's testing requirements at www.ets.org/praxis/states.

How are the *Praxis* tests given?

Praxis tests are given on computer. Other formats are available for test takers approved for accommodations (see page 49).

What should I expect when taking the test on computer?

When taking the test on computer, you can expect to be asked to provide proper identification at the test center. Once admitted, you will be given the opportunity to learn how the computer interface works (how to answer questions, how to skip questions, how to go back to questions you skipped, etc.) before the testing time begins. Watch the [What to Expect on Test Day](#) video to see what the experience is like.

Where and when are the *Praxis* tests offered?

You can select the test center that is most convenient for you. The *Praxis* tests are administered through an international network of test centers, which includes Prometric® Testing Centers, some universities, and other locations throughout the world.

Testing schedules may differ, so see the *Praxis* web site for more detailed test registration information at www.ets.org/praxis/register.

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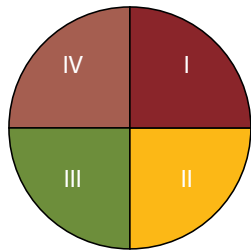
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1. Learn About Your Test

Learn about the specific test you will be taking

Middle School: Content Knowledge (5146)

Test at a Glance			
Test Name	Middle School: Content Knowledge		
Test Code	5146		
Time	2 hours		
Number of Questions	120		
Format	Selected-response questions, non-programmable calculator use permitted		
Test Delivery	Computer delivered		
	Content Categories	Approximate Number of Questions	Approximate Percentage of Examination
	I. Literature and Language Studies	30	25%
	II. Mathematics	30	25%
	III. History/Social Studies	30	25%
	IV. Science	30	25%

About This Test

The Middle School: Content Knowledge test is designed to measure knowledge and higher-order thinking skills of prospective middle school teachers.

The 120 selected-response test questions focus on the four subject areas that are considered central to all education: literature and language studies, mathematics, history/social studies, and science. Test questions are arranged in the test book by subject area.

The test is not designed to be aligned with any particular curricula, but it is intended to be consistent with the recommendations of national studies on standards for teacher preparation. The ELA section of the test reflects the Standards for the English Language Arts (2012), by National Council of Teachers of English (NCTE) and the International Reading Association (IRA), and the Common Core State Standards for English Language Arts and Literacy (2010). The mathematics section of the test reflects the Program Standards for the Initial Preparation of Middle Grades Mathematics Teachers (2012), by the National Council of Teachers of Mathematics (NCTM) and the Council for the Accreditation of Educator Preparation (CAEP), and the Common Core State Standards for Mathematics (2010). The development of the science test questions reflect the National Science Education Standards (NSES) and the National Science Teacher Association (NSTA) standards. The social studies section of the test reflects the National Curriculum Standards for Social Studies: A Framework for Teaching, Learning, and Assessment (2010) by the National Council for the Social Studies (NCSS).

This test may contain some questions that will not count toward your score.

Test Specifications

Test specifications in this chapter describe the knowledge and skills measured by the test. Study topics to help you prepare to answer test questions can be found on page 32.

I. Literature and Language Studies

Focus is on literature, language, and components of written and oral communication. Literature includes both expository and narrative texts and the written materials of all disciplines. Language Studies includes the processes of language development and the uses of language in written and oral communication. Questions allow examinees to demonstrate their knowledge and understanding of literature and language as well as their ability to think critically about relevant problems and to apply the principles of the language arts within diverse contexts.

A. Literature (35%)

1. Literary concepts, conventions, terminology
2. Assumptions and conventions of primary literary genres, including children's literature
3. Social/historical contexts as they relate to literature
4. Approaches to reading and interpreting literature

B. Language and linguistics (30%)

1. Basic stages of language development, including factors that enhance or inhibit this development
2. Historical and cultural influences on the evolution of standard American English
3. Principles of linguistics in analyzing various textual contexts
4. Integration of language across disciplines

C. Oral and written communication (35%)

1. Application of communication skills to analysis and production of written text
2. Application of communication skills to analysis of oral discourse
3. Rhetorical conventions of narration, exposition, reflection, and argumentation
4. Retrieval of information from print and nonprint sources
5. Interpretation of the written reports of research

II. Mathematics

Focus is on the mathematical understandings that middle school teachers must have, the ability to communicate these understandings, and the ability to solve mathematical problems.

Because the emphasis is on assessing the examinee's ability to reason logically, to use mathematical techniques in problem solving, and to communicate mathematical ideas effectively, examinees are not required to do much computation. Examinees may use non-programmable calculators while taking the test; a basic four-function calculator will be adequate.

The test questions do not require knowledge of advanced-level mathematics vocabulary but may require examinees to relate mathematics to real-life situations. Mathematics is conceptualized as an integrated field; therefore, a single problem may test several mathematical content areas.

Although few technical words are used in the test questions, terms such as area, perimeter, ratio, integer, factor, and prime number are used because it is assumed that these are commonly encountered in the mathematics that all examinees have studied.

A. Number sense and numeration (20%)

1. Understand the meaning/implication of number and number concepts as they relate to problem solving, using cardinal and ordinal numbers, place value, ordering of fractions, decimals, whole numbers

B. Geometry (20%)

1. Knowledge of relationships in both two and three dimensions
2. Ability to draw inferences based on precepts/concepts of parallelism, perpendicularity, congruence and similarity, angle measures, and polygons

C. Measurement (5%)

1. Knowledge and application of standard units of both the English and metric systems, nonstandard units, estimation, perimeter, area, volume, mass, weight, angle measure, time, temperature

D. Algebraic concepts (10%)

1. Recognize and apply algebraic concepts and properties
2. Describe patterns by writing or identifying a formula

E. Number theory (10%)

1. Problem solving that demonstrates an understanding of prime and composite numbers, divisibility rules, least common multiple, greatest common divisor, and set theory

F. The real number system and its subsystems (20%)

1. Solve real-world situational problems
2. Work with both standard and alternate algorithms

G. Probability and statistics (15%)

1. Understand the organization, presentation, and interpretation of data in various forms
2. Recognize valid and invalid inferences
3. Solve basic problems
4. Make predictions involving probability and statistics

III. History/Social Studies

Focus is on essential understanding of important historical events and issues and basic social science concepts. Because history and the social sciences are best seen as mutually enriching, most questions will require knowledge of both history and the social sciences.

Since critical thinking skills are integral to essential understandings, most questions will require the exercise of such skills. In many instances, examinees will be asked to utilize these skills in demonstrating an understanding of original documents, such as maps, charts, graphs, cartoons, and short quotations.

History: all questions in the History/Social Studies area require knowledge of history except for one question that has a non-historical perspective.

A. United States history (50%)

1. Native American civilizations
2. European exploration and colonization
3. The American revolution and the founding of the nation
4. Growth of the new republic
5. The Civil War and Reconstruction: causes and consequences
6. Industrialization of America
7. World War I: causes and consequences
8. Post-World War I America
9. World War II: causes and consequences
10. Post-World War II America

B. World history (45%)

1. Prehistory and the development of early civilizations
2. Classical civilizations
3. Development of world religions
4. Feudalism in Japan and Europe
5. Chinese and Indian empires
6. Sub-Saharan kingdoms and cultures
7. Islamic civilization
8. Civilizations of the Americas
9. Rise and expansion of Europe

10. European developments
11. Nationalism and imperialism
12. 20th-century ideologies and conflicts

C. Nonhistorical perspective (5%)

1. Social science questions not posed in historical context

Social Sciences: most questions in the History/Social Studies area require knowledge of social science as well as history. For those questions that require knowledge of both history and social science, the approximate percentages that require knowledge in each social science area are given below.

D. Government and politics (20%)

1. Political concepts and theories
2. United States political system

E. Geography (35%)

1. Map and globe skills
2. Physical geography
3. Cultural geography
4. Political geography
5. Economic geography
6. Regional geography

F. Economics (25%)

1. Basic economic concepts
2. Government's role in the economy

G. Anthropology and sociology (20%)

1. Definitions, research methods, techniques of study
2. Human culture, social organization
3. How cultures change

IV. Science

Focus is on the ability to demonstrate an understanding of scientific concepts, apply those concepts, identify problems, formulate and test hypotheses, design experiments, analyze and evaluate data, use both theoretical and practical models, and use instruments. Also includes the impact of science and technology on society and the environment. Because science is viewed as an integrated field, a single question may assess understanding of several content areas.

A. Life Science (33–34%)

1. Cellular biology: biologically important molecules, structure and function of cells and their organelles, energy sources and processes, and genes and gene function
2. Biology of organisms: life forms, structure and function of organ systems, and basic principles of heredity
3. Ecology, interrelationships in the biosphere: characteristics of ecosystems, energy flow in biological communities, and characteristics of biological communities
4. Evolution: evolutionary mechanisms, evolutionary patterns, evidence for evolutionary change, and history of life as related to the geological timeline

B. Earth and Space Science (33–34%)

1. Astronomy: the solar system and planetary systems, stars and galaxies, and cosmology
2. Geology: earth materials, internal processes, landforms and external processes, and the history of the Earth and its life-forms
3. Meteorology: atmospheric composition and structure, atmospheric movement, and weather and climate
4. Oceanography: biological, chemical, geological, and physical processes and characteristics

C. Physical Science (33–34%)

1. Matter: characteristics, structure, and physical and chemical properties
2. Reactions and interactions: kinetic theory, changes in state, chemical reactions, oxidation and reduction, acids and bases, catalysts, and chemical bonding
3. Macromechanics: straight line, projectile, circular, and periodic motion, Newton's laws of motion, gravity, weight, mass, and conservation laws
4. Energy: sources and transformations, and heat
5. Electricity and magnetism: static and current electricity, circuits, magnetism, and applications
6. Wave phenomena: electromagnetic spectrum, mirrors, lenses, sound production, and applications
7. Modern physics/nuclear chemistry: relativity, radioactivity, fusion, and fission

2. Familiarize Yourself with Test Questions

Become comfortable with the types of questions you'll find on the Praxis tests

The *Praxis* assessments include a variety of question types: constructed response (for which you write a response of your own); selected response, for which you select one or more answers from a list of choices or make another kind of selection (e.g., by clicking on a sentence in a text or by clicking on part of a graphic); and numeric entry, for which you enter a numeric value in an answer field. You may be familiar with these question formats from taking other standardized tests. If not, familiarize yourself with them so you don't spend time during the test figuring out how to answer them.

Understanding Computer-Delivered Questions

Questions on computer-delivered tests are interactive in the sense that you answer by selecting an option or entering text on the screen. If you see a format you are not familiar with, read the directions carefully. The directions always give clear instructions on how you are expected to respond.

For most questions, you respond by clicking an oval to select a single answer from a list of answer choices.

However, interactive question types may also ask you to respond by:

- **Clicking more than one oval** to select answers from a list of choices.
- **Typing in an entry box.** When the answer is a number, you may be asked to enter a numerical answer. Some questions may have more than one place to enter a response.
- **Clicking check boxes.** You may be asked to click check boxes instead of an oval when more than one choice within a set of answers can be selected.
- **Clicking parts of a graphic.** In some questions, you will select your answers by clicking on a location (or locations) on a graphic such as a map or chart, as opposed to choosing your answer from a list.
- **Clicking on sentences.** In questions with reading passages, you may be asked to choose your answers by clicking on a sentence (or sentences) within the reading passage.
- **Dragging and dropping answer choices into targets on the screen.** You may be asked to select answers from a list of choices and drag your answers to the appropriate location in a table, paragraph of text or graphic.
- **Selecting answer choices from a drop-down menu.** You may be asked to choose answers by selecting choices from a drop-down menu (e.g., to complete a sentence).

Remember that with every question you will get clear instructions.

Perhaps the best way to understand computer-delivered questions is to view the [Computer-delivered Testing Demonstration](#) on the Praxis web site to learn how a computer-delivered test works and see examples of some types of questions you may encounter.

Understanding Selected-Response Questions

Many selected-response questions begin with the phrase “which of the following.” Take a look at this example:

Which of the following is a flavor made from beans?

- (A) Strawberry
- (B) Cherry
- (C) Vanilla
- (D) Mint

How would you answer this question?

All of the answer choices are flavors. Your job is to decide which of the flavors is the one made from beans.

Try following these steps to select the correct answer.

- 1) **Limit your answer to the choices given.** You may know that chocolate and coffee are also flavors made from beans, but they are not listed. Rather than thinking of other possible answers, focus only on the choices given (“which of the following”).
- 2) **Eliminate incorrect answers.** You may know that strawberry and cherry flavors are made from fruit and that mint flavor is made from a plant. That leaves vanilla as the only possible answer.
- 3) **Verify your answer.** You can substitute “vanilla” for the phrase “which of the following” and turn the question into this statement: “Vanilla is a flavor made from beans.” This will help you be sure that your answer is correct. If you’re still uncertain, try substituting the other choices to see if they make sense. You may want to use this technique as you answer selected-response questions on the practice tests.

Try a more challenging example

The vanilla bean question is pretty straightforward, but you’ll find that more challenging questions have a similar structure. For example:

Entries in outlines are generally arranged according to which of the following relationships of ideas?

- (A) Literal and inferential
- (B) Concrete and abstract
- (C) Linear and recursive
- (D) Main and subordinate

You’ll notice that this example also contains the phrase “which of the following.” This phrase helps you determine that your answer will be a “relationship of ideas” from the choices provided. You are supposed to find the choice that describes how entries, or ideas, in outlines are related.

Sometimes it helps to put the question in your own words. Here, you could paraphrase the question in this way: “How are outlines usually organized?” Since the ideas in outlines usually appear as main ideas and subordinate ideas, the answer is (D).

QUICK TIP: Don't be intimidated by words you may not understand. It might be easy to be thrown by words like "recursive" or "inferential." Read carefully to understand the question and look for an answer that fits. An outline is something you are probably familiar with and expect to teach to your students. So slow down, and use what you know.

Watch out for selected-response questions containing "NOT," "LEAST," and "EXCEPT"

This type of question asks you to select the choice that does not fit. You must be very careful because it is easy to forget that you are selecting the negative. This question type is used in situations in which there are several good solutions or ways to approach something, but also a clearly wrong way.

How to approach questions about graphs, tables, or reading passages

When answering questions about graphs, tables, or reading passages, provide only the information that the questions ask for. In the case of a map or graph, you might want to read the questions first, and then look at the map or graph. In the case of a long reading passage, you might want to go ahead and read the passage first, noting places you think are important, and then answer the questions. Again, the important thing is to be sure you answer the questions as they refer to the material presented. So read the questions carefully.

How to approach unfamiliar formats

New question formats are developed from time to time to find new ways of assessing knowledge. Tests may include audio and video components, such as a movie clip or animation, instead of a map or reading passage. Other tests may allow you to zoom in on details in a graphic or picture.

Tests may also include interactive questions. These questions take advantage of technology to assess knowledge and skills in ways that standard selected-response questions cannot. If you see a format you are not familiar with, **read the directions carefully**. The directions always give clear instructions on how you are expected to respond.

QUICK TIP: Don't make the questions more difficult than they are. Don't read for hidden meanings or tricks. There are no trick questions on *Praxis* tests. They are intended to be serious, straightforward tests of your knowledge.

Understanding Constructed-Response Questions

Constructed-response questions require you to demonstrate your knowledge in a subject area by creating your own response to particular topics. Essays and short-answer questions are types of constructed-response questions.

For example, an essay question might present you with a topic and ask you to discuss the extent to which you agree or disagree with the opinion stated. You must support your position with specific reasons and examples from your own experience, observations, or reading.

Take a look at a few sample essay topics:

- "Celebrities have a tremendous influence on the young, and for that reason, they have a responsibility to act as role models."
- "We are constantly bombarded by advertisements—on television and radio, in newspapers and magazines, on highway signs, and the sides of buses. They have become too pervasive. It's time to put limits on advertising."
- "Advances in computer technology have made the classroom unnecessary, since students and teachers are able to communicate with one another from computer terminals at home or at work."

Keep these things in mind when you respond to a constructed-response question

- 1) **Answer the question accurately.** Analyze what each part of the question is asking you to do. If the question asks you to describe or discuss, you should provide more than just a list.
- 2) **Answer the question completely.** If a question asks you to do three distinct things in your response, you should cover all three things for the best score. Otherwise, no matter how well you write, you will not be awarded full credit.
- 3) **Answer the question that is asked.** Do not change the question or challenge the basis of the question. You will receive no credit or a low score if you answer another question or if you state, for example, that there is no possible answer.
- 4) **Give a thorough and detailed response.** You must demonstrate that you have a thorough understanding of the subject matter. However, your response should be straightforward and not filled with unnecessary information.
- 5) **Reread your response.** Check that you have written what you thought you wrote. Be sure not to leave sentences unfinished or omit clarifying information.

QUICK TIP: You may find that it helps to take notes on scratch paper so that you don't miss any details. Then you'll be sure to have all the information you need to answer the question.

3. Practice with Sample Test Questions

Answer practice questions and find explanations for correct answers

Sample Test Questions

This test is available via computer delivery. To illustrate what a computer-delivered test looks like, the following sample question shows an actual screen used in a computer-delivered test. For the purposes of this guide, sample questions are presented as they would appear in a paper-delivered test.

The screenshot shows a test interface with a light blue header. On the left is the ETS PRAXIS logo. In the center, it says "Question 1 of 94". On the right, there are five buttons: "Review" (with a magnifying glass icon), "Mark" (with a square icon), "Help" (with a question mark icon), "Back" (with a left arrow icon), and "Next" (with a right arrow icon). Below these buttons is a "Show Time" button. The main content area contains the following text:

What quantity of oxygen, O_2 , contains very nearly the same number of molecules as 36.0 grams of water, H_2O ?

○ 64.0 grams
○ 32.0 grams
○ 16.0 grams
○ 8.0 grams

At the bottom of the question area, there is a grey instruction box that reads: "Answer the question above by clicking on the correct response."

The sample questions that follow illustrate the kinds of questions on the test. They are not, however, representative of the entire scope of the test in either content or difficulty. Answers with explanations follow the questions.

Directions: Each of the questions or statements below is followed by four suggested answers or completions. Select the one that is best in each case.

I. Literature and Language Studies

1. (1) Early 20th-century studies of spoken Native American languages proved otherwise.
- (2) That flexibility was evidenced, in part, by the complexity and range of Native American oral literature.
- (3) Linguists once believed that peoples without an elaborate written literature had no more than a few hundred words in their vocabulary.
- (4) Each language studied contained at least 20,000 words.
- (5) In addition to copiousness, the spoken languages were found by linguists to be as flexible as languages with a written tradition.

Which of the following represents the best ordering of the sentences above into a coherent paragraph?

- (A) 1, 2, 3, 4, 5
- (B) 3, 1, 4, 5, 2
- (C) 3, 2, 1, 5, 4
- (D) 5, 3, 2, 4, 1

Questions 2–4 are based on the following excerpt from *Thousand Pieces of Gold*, by Ruthanne Lum McCunn.

Polly laid her forehead against the cold pane of glass. Outside a meadowlark sang, its haunting melody reminding her of the three robins she had saved after Mr. Grostein's cat had killed the birds' mother.

At first, they were content to fly around her room, but soon they began pecking at the window, demanding to be let out. So Charlie built a cage for them, and Polly hung the cage on a tree outside. But their cries tore at her, and finally she opened the door, letting them fly where they pleased. Then one day Mr. Benson, the butcher, came to the saloon and handed her a cigar box with three stiff bodies crusted with blood.

He was sorry, he said. He knew how much the birds meant to her, and he had reprimanded his clerk severely. But the way they hovered, demanding scraps, had been annoying, and if she had kept them in the cage Charlie had made for them, his clerk would not have killed them.

Charlie had told her the same thing, and she had tried to explain why, even though she mourned the birds' deaths, she did not regret leaving them uncaged. But he had not understood. Then how could she make him understand her own need to escape the cage that held her?

2. The central analogy presented in the passage suggests which of the following?
 - (A) Mr. Benson understood better than Charlie how Polly felt about the birds.
 - (B) Polly would prefer to be free, even if she suffered as a result.
 - (C) Polly had at one time been imprisoned but had managed to escape.
 - (D) Charlie was correct in believing that the birds were better off caged than free.
3. The narrative suggests that Polly feels her relationship with Charlie is
 - (A) new and fragile
 - (B) loving but argumentative
 - (C) caring but flawed
 - (D) frivolous and demeaning
4. Which of the following best describes Polly's mood as it is presented in the passage?
 - (A) Hostile
 - (B) Self-recriminating
 - (C) Disinterested
 - (D) Pensive

ə abut ɔ kitten ər further a back ā bake ä cot, cart
 au out ch chin e less ē easy g gift i trip ī life
 j joke ŋ sing ō flow ô flaw oi coin th thin th this
 ü loot ù foot y yet yū few yū furious zh vision

5. According to the pronunciation guide above, which of the following words would be represented as “tə -'päg-rə-fē”?

- (A) Telepathy
- (B) Typographer
- (C) Topography
- (D) Telegraphic

6. Freewriting, brainstorming, clustering, and idea mapping are most important during which stage of the writing process?

- (A) Prewriting
- (B) Drafting
- (C) Revising
- (D) Proofreading

7. Set in the American Civil War, the novel concerns a young soldier’s first encounter with battle and the psychological changes that he undergoes. Published in 1895, the novel had a great influence on 20th-century fiction.

The novel discussed above is

- (A) Andrea Davis Pinkney’s *Silent Thunder*
- (B) Gary Paulsen’s *Soldier’s Heart*
- (C) Stephen Crane’s *The Red Badge of Courage*
- (D) Carolyn Reeder’s *Shades of Gray*

8. _____ is a narrative that takes abstract ideas of behavior—good or bad, wise or foolish—and attempts to make them concrete and striking. The chief actor in these stories is usually an animal or inanimate object that behaves like a human and engages in a single significant act intended to teach a moral lesson.

Which of the following will correctly complete the passage above?

- (A) A myth
- (B) A fable
- (C) An epic
- (D) A legend

9. Identify which of the following characteristics apply to each of the two poetic forms.

For each characteristic, choose one poetic form.

Characteristic	Haiku	Limerick
Composed of 17 syllables		
Composed of 5 lines of verse		
Often has a nonsensical theme		
Follows a strict rhyme scheme		
Often focused on nature		

10. After John had drilled eight holes, he noticed that the edge of the wood was cracked.

The sentence is an example of which of the following sentence types?

- (A) simple
- (B) compound
- (C) complex
- (D) compound-complex

11. Though Josh mentioned that she was a good friend, Anna knew it was a hollow compliment.

In the sentence above, the word “hollow” is best defined as

- (A) deep
- (B) sunken
- (C) vicious
- (D) insincere

12. The paragraph below is a draft written by a student.

Samantha is a great basketball player. She sometimes scores as many as twenty points a game, and she helps our team win again and again. Samantha is also a great friend. She is really great and always shares her snacks with other kids on the team.

Which of the following resource books would best help the student author to develop a more effective description of Samantha within her draft?

- (A) An encyclopedia
 (B) A thesaurus
 (C) A grammar guide
 (D) A dictionary
13. Everyone in my school has that video game. It is obviously the best video game out there. I need it too, or everyone will think I am backward.

The argument above is ineffective because it suffers from which of the following logical fallacies?

- (A) Straw man
 (B) Ad hominem
 (C) Bandwagon
 (D) Post hoc
14. A teacher is working with an eighth-grade student who reads at the fifth-grade level. When the student encounters an unknown word, “cohabit,” the teacher breaks the word into parts and has the student determine the meaning of “co” and the meaning of “habit,” using words with the same prefix or root, such as “coworker” and “habitat.”

The activity described above relies most directly on knowledge of which of the following language concepts?

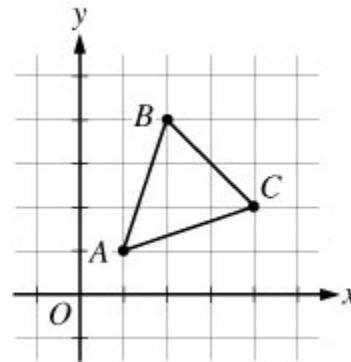
- (A) Morphemes
 (B) Synonyms
 (C) Phonemes
 (D) Orthography

II. Mathematics

To make 36 five-inch pancakes, mix $4\frac{1}{2}$ cups of water with two pounds of pancake mix

15. Last week Mark went shopping at the Food Warehouse and bought a large package of pancake mix, which contained the directions shown. If Mark wants to make 10 five-inch pancakes, how many cups of water should he use with the pancake mix?

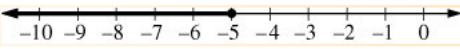
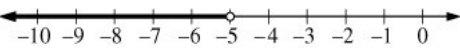
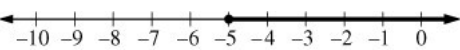
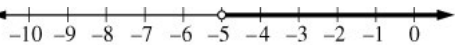
- (A) $4\frac{1}{20}$
 (B) $1\frac{3}{4}$
 (C) $1\frac{1}{2}$
 (D) $1\frac{1}{4}$

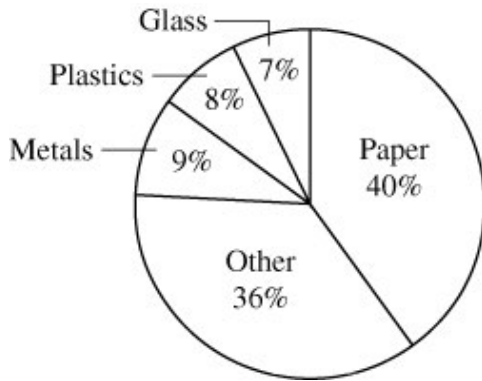


16. In the xy -plane, the triangle ABC is to be reflected about the y -axis to form triangle $A'B'C'$. What will be the coordinates of C' ?
- (A) $(-4, -2)$
 (B) $(-4, 2)$
 (C) $(-2, -4)$
 (D) $(-2, 4)$

$$-4x + 1 \geq 21$$

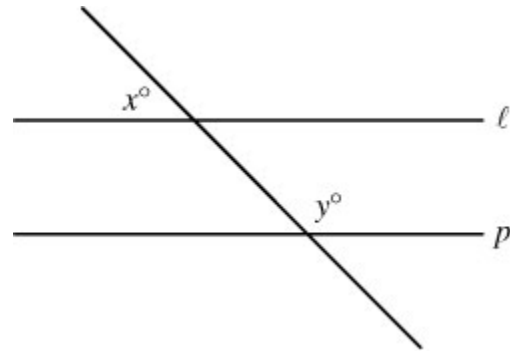
17. Which of the following represents the solution set for the inequality shown?

- (A) 
- (B) 
- (C) 
- (D) 



18. The graph above shows the distribution of the contents, by weight, of a county's trash. If approximately 60 tons of the trash consists of paper, approximately how many tons of the trash consist of plastics?

- (A) 24
 (B) 20
 (C) 15
 (D) 12

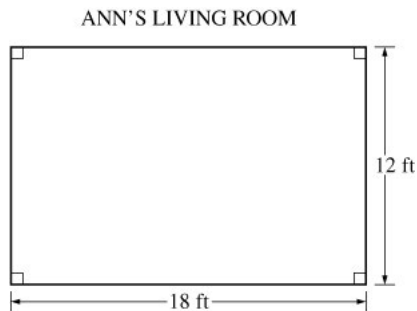


19. In the figure above, line ℓ and line p are parallel, and $y = 3x$. What is the value of x ?

- (A) 30
 (B) 45
 (C) 60
 (D) 75

20. If a student takes a test consisting of 20 true-false questions and randomly guesses at all of the answers, what is the probability that all 20 guesses will be correct?

- (A) $\left(\frac{1}{2}\right)^{20}$
 (B) $\frac{1}{2(20)}$
 (C) $\frac{1}{20}$
 (D) $\frac{1}{2}$



21. Ann plans to place a continuous wallpaper border on the walls of her living room, shown above. Each roll costs \$6.47, and no partial rolls are sold. If each roll of border is 8 feet long, what is the minimum amount Ann can spend on rolls of border to complete her project?
- (A) \$45.29
 (B) \$51.76
 (C) \$103.50
 (D) \$174.69
22. The original price of a certain car was 25 percent greater than its cost to the dealer. The actual selling price was 25 percent less than the original price. If c is the cost of the car to the dealer and p is the selling price, which of the following represents p in terms of c ?
- (A) $p = 1.00c$
 (B) $p = 1.25c$
 (C) $p = 0.25(0.75c)$
 (D) $p = 0.75(1.25c)$

III. History/Social Studies

23.

ESTIMATED POPULATION OF AMERICAN COLONIES, 1630 AND 1750		
	1630	1750
New England		
White Inhabitants	1,796	349,029
Black Inhabitants	0	10,982
Middle Colonies		
White Inhabitants	340	275,723
Black Inhabitants	10	20,736
Southern Colonies		
White Inhabitants	2,450	309,588
Black Inhabitants	50	204,702
Total		
White Inhabitants	4,586	934,340
Black Inhabitants	60	236,420

Which of the following is a correct statement supported by the chart above?

- (A) Religion was a powerful force opposing slavery in the American colonies.
 (B) Slavery grew rapidly throughout the American colonies despite restrictions on the slave trade.
 (C) Southern landholders preferred the labor of indentured servants to slave labor.
 (D) By 1750, the southern colonies had become demographically distinct from the other colonies.

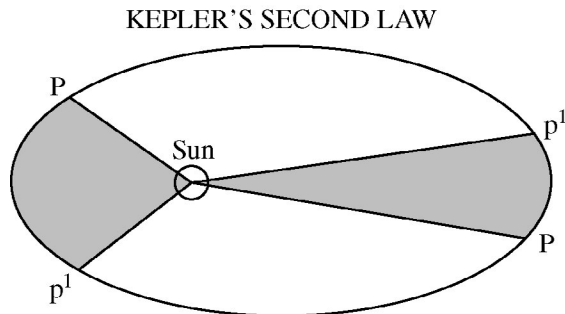
24. “We hold these truths to be self-evident: that all men and women are created equal; that they are endowed by their Creator with certain inalienable rights; that among these are life, liberty, and the pursuit of happiness; that to secure these rights governments are instituted, deriving their powers from the consent of the governed. Whenever any form of government becomes destructive of these ends, it is the right of those who suffer from it to refuse allegiance to it, and to insist upon the institution of a new government.”

– Seneca Falls Declaration of Sentiments and Resolutions, 1848

The excerpt above is from a major declaration of which of the following movements?

- (A) Abolitionism
- (B) Revivalism
- (C) The women’s rights movement
- (D) The public school movement

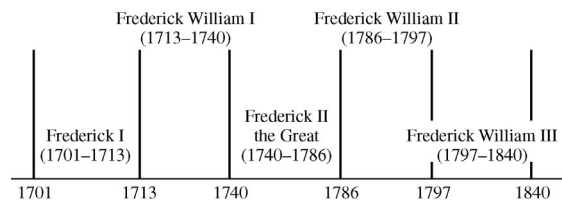
25.



The diagram above of the second law of Johannes Kepler illustrates that Kepler believed that

- (A) the Earth was the center of the universe and the Sun revolved around the Earth
- (B) the language of mathematics could describe the movements of the planets
- (C) planetary motion was random and not subject to human understanding
- (D) there were only four planets in the Solar System

26.



The timeline above of the Hohenzollern rulers of Prussia is misleading primarily because it

- (A) omits essential information about each ruler
 - (B) omits other events of historical importance
 - (C) lists only male rulers of the Hohenzollern dynasty
 - (D) spaces the reigns, not the years, equally
27. European interest in the Middle East grew significantly in the 20th century primarily because
- (A) Europe became interested in settling part of its growing population in the Middle East
 - (B) many European countries began hiring guest workers from the Middle East
 - (C) the Middle East became a significant producer of a critical natural resource that Europe sought
 - (D) the Middle East became a large potential market for European goods
28. Which of the following resulted from President Franklin D. Roosevelt’s New Deal?
- (A) All large banks were nationalized.
 - (B) The United States Supreme Court gained two new justices.
 - (C) The national government grew in size, scope, and responsibility.
 - (D) Decisions about welfare spending were entrusted to the states.

IV. Science

29. A particular human trait is carried by genes on the Y chromosome of a man. How many of his offspring will carry the trait?
- (A) None of his male offspring only
 - (B) One-half of his female offspring only
 - (C) All of his male offspring
 - (D) All of his female offspring
30. "Shooting stars" that appear in the night sky are most likely to be
- (A) particles of exploding stars
 - (B) comets passing near the Earth
 - (C) meteors passing into the Earth's atmosphere
 - (D) northern or southern lights caused by magnetic storms on the Sun
31. A chlorine compound is added to swimming pools in order to
- (A) monitor the pH of the water
 - (B) add color to the water
 - (C) soften the water by precipitating harmful chemicals
 - (D) destroy bacteria through an oxidation reaction
32. Of the following methods of producing electricity, which contributes most to acid rain in North America?
- (A) Windmills
 - (B) Nuclear power plants
 - (C) Power plants that burn fossil fuels
 - (D) Solar panels
33. Two campers want to bake potatoes in a fire. Both wrap their potatoes in aluminum foil. One camper, however, sticks a large nail through her potato. Which of the following is most likely to happen after the potatoes are placed in the fire?
- (A) Both potatoes will cook at the same rate.
 - (B) Neither potato will cook because the foil will reflect the heat.
 - (C) The potato with the nail will cook faster because heat will be conducted into the potato.
 - (D) The potato with the nail will cook more slowly because heat will be conducted out of the potato.
34. Which of the following statements is true of hurricanes but not of tornadoes?
- (A) They form only over warm oceans.
 - (B) They have very high winds.
 - (C) They may cause great property damage.
 - (D) They may cause human fatalities.

Answers to Sample Questions

Literature and Language Studies

1. The correct answer is (B). Only sentence 3 has characteristics that both introduce a paragraph and contain a suggestion of the way the ideas in the paragraph will be developed. The words “once believed” in sentence 3 anticipate the counterassertion in sentence 1, which introduces the example of Native American languages. Sentence 4 provides specific support to sentence 1. The introductory phrase in sentence 5 refers to the number of words mentioned in sentence 4. Further, sentence 5 introduces the notion of flexibility, which is restated and developed in sentence 2. (A), (C), and (D) are incorrect because they do not present the sentences in an order that would create a coherent paragraph.

2. The correct answer is (B). The central analogy links Polly’s feelings of confinement and desire for freedom to the plight of the birds she had released from their cage. She did not regret her action although the birds’ freedom had led to their deaths. (A) is incorrect because Mr. Benson’s understanding of Polly’s feelings is not represented by an analogy. (C) is incorrect because there is no implication that Polly was ever imprisoned. (D) is incorrect because Charlie’s beliefs are not represented by an analogy.

3. The correct answer is (C). Charlie tried to protect the birds for Polly and to solve the problem they presented by caging them. He regretted that they had been killed. Polly longs to have Charlie understand what she is feeling; there is no suggestion, however, of angry confrontation. The passage presents evidence of caring but also of a failure of communication. (A) is incorrect because the relationship does not seem to be new. (B) is incorrect because there is no indication that Polly and Charlie are argumentative. (D) is incorrect because Polly and Charlie seem to treat each other well, not frivolously.

4. The correct answer is (D). The characterizations of Polly in the first and last paragraphs suggests reflection, not hostility or self-reproach or disinterest. (A) is incorrect because Polly does not seem angry with anyone. (B) is incorrect because the text states explicitly that Polly “did not regret” her choice. (C) is incorrect because Polly cares about the birds and their fate.

5. The correct answer is (C). The first syllable contains a schwa vowel sound and the second the vowel sound in the word “cot.” The third syllable contains a schwa vowel sound, and the fourth contains the sound of the vowels in the word “easy.” (A) is incorrect because this would be “te-’le-pə-thē.” (B) is incorrect because this would be “tī-’pā-grə-fār.” (D) is incorrect because this would be “te-lə-’gra-fīk.”

6. The correct answer is (A). The terms mentioned are processes and devices associated with generating new ideas and organizing them. These processes and devices would not be associated with proofreading (D). While they might be part of drafting (B) or revising (C), they are most important during the prewriting stage of the writing process.

7. The correct answer is (C). The passage presents factual information and a brief description of the plot of *The Red Badge of Courage* by Stephen Crane. (A), (B), and (D) are incorrect because the passage does not discuss the plot of the novels *Silent Thunder*, *Soldier’s Heart*, or *Shades of Gray*.

8. The correct answer is (B). The statements on which the question is based constitute a definition of a fable. (A), (C), and (D) are incorrect because while all of the choices are types of narratives, only a fable fits the full description.

9. The correct answers are haiku, limerick, limerick, and haiku. Haikus are composed of 17 syllables (5 in the first line, 7 in the second line, and 5 in the third line) and are often focused on nature. Limericks are composed of 5 lines that follow a strict rhyme scheme, and they often center on nonsensical ideas.

10. The correct answer is (C). Complex sentences contain one independent clause and one or more dependent clauses. “After John had drilled eight holes” is a dependent clause, and “he noticed that the edge of the wood was cracked” is an independent clause. A simple sentence (A) contains only one independent clause and no dependent clauses. A compound sentence (B) contains two or more independent clause, and the example contains only one. A compound-complex sentence (D) contains two or more independent clauses as well as one or more dependent clauses. The example contains one independent clause and one dependent clause.

11. The correct answer is (D). The use of the word “though” in the clause “Though Josh mentioned that she was a good friend” indicates that the compliment was not sincere. (A) is incorrect because describing a compliment as “deep” could indicate that the compliment was heartfelt and, therefore, would not logically follow the first clause. (B) is incorrect because “sunken” describes a physical state, which is not relevant to the sentence. (C) is incorrect because “vicious” is not a synonym for “hollow.”

12. The correct answer is (B). The student could use a thesaurus to locate synonyms for “great.” Use of these synonyms would help to clarify the type of person that Samantha is by providing a more specific description of

her. (A) is incorrect because an encyclopedia would contain information on only well-known people, so it would not provide any information about Samantha. (C) is incorrect because there are no grammatical errors in the description. (D) is incorrect because all of the words in the description are used correctly.

13. The correct answer is (C). The bandwagon fallacy is the suggestion that one should join a cause or adopt a behavior because of its popularity, not because of any reasoned argument for it. The straw man fallacy (A) is committed when a person argues against a distorted, exaggerated, or misrepresented version of a position instead of arguing against the actual position. The ad hominem fallacy (B) involves rejecting an argument on the basis of some irrelevant fact about the person presenting it. The post hoc fallacy (D) is committed when it is concluded that one event causes another simply because the proposed cause occurred before the proposed effect.

14. The correct answer is (A). Knowledge of morphemes is knowledge of the affixes, combining forms, and roots of words. This knowledge builds vocabulary, and it is necessary for the kind of word analysis described in the activity. Knowledge of synonyms (B) is helpful in vocabulary development, but it is not directly relevant to the activity described. Phonemic awareness is the ability to hear, identify, and manipulate individual sounds, or phonemes (C), in spoken words. While knowledge of phonemes might be considered a prerequisite for vocabulary development, it is not the focus of the activity described. Orthographic knowledge (D) is the part of language study that deals with letters and spelling. It is not the focus of the activity described.

Mathematics

15. The correct answer is (D). According to the recipe, the ratio of the number of five-inch pancakes to the required number of cups of water is $\frac{36}{4\frac{1}{2}}$, which

simplifies to $\frac{36}{9} = \frac{72}{9} = \frac{8}{1}$. Since Mark is using the

same recipe to make 10 five-inch pancakes, it is possible to set up the proportion

$\frac{8 \text{ pancakes}}{1 \text{ cup of water}} = \frac{10 \text{ pancakes}}{x \text{ cups of water}}$. Cross multiplying

gives $8x = 10$, or $x = \frac{10}{8} = \frac{5}{4} = 1\frac{1}{4}$. Mark should use

$1\frac{1}{4}$ cups of water to make the 10 pancakes.

16. The correct answer is (B). The coordinates of point C are (4, 2). When a point is reflected over the y-axis, the x-coordinate of the point changes to its opposite, but the y-coordinate remains the same, so (4, 2) is transformed to (-4, 2), which means the coordinates of C' are (-4, 2).

17. The correct answer is (A). To determine which option represents the solution set for the inequality, subtract 1 from each side of the inequality and then divide each side of the inequality by -4. Remember that when multiplying or dividing both sides of an inequality by a negative number, the direction of the inequality symbol needs to be reversed. Thus, the equivalent inequality is $x \leq -5$. (A) is the option that represents the set of all real numbers less than or equal to -5.

18. The correct answer is (D). One of the ways to solve the problem is to use the information about the trash that consists of paper to find the total weight of the county's trash, and then use this information to find how many tons of the trash consist of plastics. The problem states that 60 tons of the trash consists of paper, and the graph shows that this amount equals 40% of the total, so $60 = 0.4 \times (\text{total weight of trash})$, and the total weight of trash is $\frac{60}{0.4} = 150$ tons. Then,

the weight of trash that consists of plastics equals 8% of 150 tons, or $(0.08)(150)$, which equals 12 tons. Alternatively, the problem can be solved using the fact that the ratio of plastics to paper in the trash is the same, whether the two amounts are given as percents or in tons. This gives the proportion

$\frac{\text{tons of plastics}}{\text{tons of paper}} = \frac{8\%}{40\%}$ or $\frac{\text{tons of plastics}}{60} = \frac{8}{40}$, and

when the proportion is solved the same answer of 12 tons is obtained.

19. The correct answer is (B). The properties of angles associated with parallel and transversal lines can be used to show that the angle with measure x degrees and the angle with measure y degrees are supplementary angles. Recall that the sum of the measures of supplementary angles is 180° . That is, $x + y = 180$. It is given that $y = 3x$. Substituting for y , you get $4x = 180$. Hence, $x = 45$.

20. The correct answer is (A). The probability that the student guesses any one answer correctly is $\frac{1}{2}$, and since the student is randomly guessing, the guesses are independent events, so $\frac{1}{2}$ needs to be multiplied by itself 20 times. Thus, the probability of guessing all 20 answers correctly is $\left(\frac{1}{2}\right)^{20}$.

21. The correct answer is (B). The minimum length of wallpaper border needed to decorate the room is equal to the perimeter of Ann's living room. The perimeter is the sum of the lengths of the four walls of the room, or $18 + 18 + 12 + 12 = 60$ feet. The number of rolls of border needed is determined by dividing the perimeter by the length of each roll of border, and $\frac{60 \text{ feet}}{8 \text{ feet}} = 7.5$.

Therefore, Ann needs a minimum of 7.5 rolls, and since no partial rolls are sold, she must buy 8 rolls. The cost of 8 rolls of the border is found by multiplying the cost of each roll, \$6.47, by the number of rolls needed, so the final answer is $\$6.47 \times 8 = \51.76 .

22. The correct answer is (D). This question asks you to apply your knowledge of percent increase or decrease to determine a selling price based on cost of a car to the dealer, c . Since the original price of the car was 25 percent greater than the cost to the dealer, the original price was $c + 0.25c = 1.25c$. Since the selling price was 25 percent less than that amount, only 75 percent of that amount was paid, and therefore the selling price of the car, p , is equal to $(0.75)(1.25c)$.

History/Social Studies

23. The correct answer is (D). While (A), (B), and (C) might have some truth for some aspects of the population of the different regions, (D) is the only claim supported by the table.

24. The correct answer is (C). The Seneca Falls Declaration is associated with the women's rights movement.

25. The correct answer is (B). The diagram reflects the mathematical concept of an ellipse, which is defined as the set of all points, the sum of whose distances from two fixed points is constant.

26. The correct answer is (D). The reigns are spaced equally, the years are not. There are only 12 years shown between Frederick I and Frederick William I. Frederick William I ruled for 27 years, and Frederick II the Great ruled for 26 years. Frederick William II ruled for only 11 years, and Frederick William III ruled for 43 years.

27. The correct answer is (C). It was in the 20th century that technological advances throughout the world increased the demand for oil and made it economically beneficial to mine the oil of the Middle East countries. This need for larger quantities of crude oil increased European interest in the politics and economics of the area.

28. The correct answer is (C). Roosevelt's New Deal established a wide range of new federal agencies concerned with issues including financial regulation of the economy, social welfare, and economic development, thereby expanding the size, scope, and responsibility of the national government. Banks were not nationalized, the size of the Supreme Court did not expand, and decisions about welfare spending were concentrated in the federal government.

Science

29. The correct answer is (C). Human males generally have one X and one Y chromosome. Male offspring will receive a Y chromosome from their father, while female offspring will not receive a Y chromosome from their father. Therefore, genes on the Y chromosome are passed only to male offspring.

30. The correct answer is (C). "Shooting stars" are meteors that have entered into the Earth's atmosphere where frictional heating has caused them to glow.

31. The correct answer is (D). Chlorine and certain chlorine-containing compounds are highly reactive oxidizing agents that are used as chemical disinfectants in a variety of situations including swimming pools.

32. The correct answer is (C). The burning of fossil fuels is a major source of sulfur oxides and nitrogen oxides that react with water in the atmosphere to form acids that can precipitate as acid rain.

33. The correct answer is (C). Although the aluminum foil will reflect radiant energy, it will not significantly reduce the flow of energy by conduction. Because a nail is a good thermal conductor, heat will flow through the nail and cook the potato from the inside as well as from the outside. Thus, the potato with the imbedded nail will cook faster.

34. The correct answer is (A). The other answer choices are true of both tornadoes and hurricanes. However, hurricanes require warm ocean surface waters in order to develop, and it is from these warm waters and the release of latent heat that they derive their energy. Tornadoes are associated with thunderstorms, form over land, and are most likely to occur when large differences in temperature and moisture exist between two air masses and the boundary between the air masses is sharp.

4. Determine Your Strategy for Success

Set clear goals and deadlines so your test preparation is focused and efficient

Effective *Praxis* test preparation doesn't just happen. You'll want to set clear goals and deadlines for yourself along the way. Otherwise, you may not feel ready and confident on test day.

1) Learn what the test covers.

You may have heard that there are several different versions of the same test. It's true. You may take one version of the test and your friend may take a different version a few months later. Each test has different questions covering the same subject area, but both versions of the test measure the same skills and content knowledge.

You'll find specific information on the test you're taking on page 5, which outlines the content categories that the test measures and what percentage of the test covers each topic. Visit www.ets.org/praxis/testprep for information on other *Praxis* tests.

2) Assess how well you know the content.

Research shows that test takers tend to overestimate their preparedness—this is why some test takers assume they did well and then find out they did not pass.

The *Praxis* tests are demanding enough to require serious review of likely content, and the longer you've been away from the content, the more preparation you will most likely need. If it has been longer than a few months since you've studied your content area, make a concerted effort to prepare.

3) Collect study materials.

Gathering and organizing your materials for review are critical steps in preparing for the *Praxis* tests. Consider the following reference sources as you plan your study:

- Did you take a course in which the content area was covered? If yes, do you still have your books or your notes?
- Does your local library have a high school-level textbook in this area? Does your college library have a good introductory college-level textbook in this area?

Practice materials are available for purchase for many *Praxis* tests at www.ets.org/praxis/testprep. Test preparation materials include sample questions and answers with explanations.

4) Plan and organize your time.

You can begin to plan and organize your time while you are still collecting materials. Allow yourself plenty of review time to avoid cramming new material at the end. Here are a few tips:

- Choose a test date far enough in the future to leave you plenty of preparation time. Test dates can be found at www.ets.org/praxis/register/centers_dates.
- Work backward from that date to figure out how much time you will need for review.
- Set a realistic schedule—and stick to it.

5) Practice explaining the key concepts.

Praxis tests with constructed-response questions assess your ability to explain material effectively. As a teacher, you'll need to be able to explain concepts and processes to students in a clear, understandable way. What are the major concepts you will be required to teach? Can you explain them in your own words accurately, completely, and clearly? Practice explaining these concepts to test your ability to effectively explain what you know.

6) Understand how questions will be scored.

Scoring information can be found on page 52.

7) Develop a study plan.

A study plan provides a road map to prepare for the *Praxis* tests. It can help you understand what skills and knowledge are covered on the test and where to focus your attention. Use the study plan template on page 30 to organize your efforts.

And most important—get started!

Would a Study Group Work for You?

Using this guide as part of a study group

People who have a lot of studying to do sometimes find it helpful to form a study group with others who are working toward the same goal. Study groups give members opportunities to ask questions and get detailed answers. In a group, some members usually have a better understanding of certain topics, while others in the group may be better at other topics. As members take turns explaining concepts to one another, everyone builds self-confidence.

If the group encounters a question that none of the members can answer well, the group can go to a teacher or other expert and get answers efficiently. Because study groups schedule regular meetings, members study in a more disciplined fashion. They also gain emotional support. The group should be large enough so that multiple people can contribute different kinds of knowledge, but small enough so that it stays focused. Often, three to six members is a good size.

Here are some ways to use this guide as part of a study group:

- **Plan the group's study program.** Parts of the study plan template, beginning on page 30, can help to structure your group's study program. By filling out the first five columns and sharing the worksheets, everyone will learn more about your group's mix of abilities and about the resources, such as textbooks, that members can share with the group. In the sixth column ("Dates I will study the content"), you can create an overall schedule for your group's study program.
- **Plan individual group sessions.** At the end of each session, the group should decide what specific topics will be covered at the next meeting and who will present each topic. Use the topic headings and subheadings in the Test at a Glance table on page 5 to select topics, and then select practice questions, beginning on page 14.
- **Prepare your presentation for the group.** When it's your turn to present, prepare something that is more than a lecture. Write two or three original questions to pose to the group. Practicing writing actual questions can help you better understand the topics covered on the test as well as the types of questions you will encounter on the test. It will also give other members of the group extra practice at answering questions.

- **Take a practice test together.** The idea of a practice test is to simulate an actual administration of the test, so scheduling a test session with the group will add to the realism and may also help boost everyone's confidence. Remember, complete the practice test using only the time that will be allotted for that test on your administration day.
- **Learn from the results of the practice test.** Review the results of the practice test, including the number of questions answered correctly in each content category. For tests that contain constructed-response questions, look at the Sample Test Questions section, which also contain sample responses to those questions and shows how they were scored. Then try to follow the same guidelines that the test scorers use.
- **Be as critical as you can.** You're not doing your study partner(s) any favors by letting them get away with an answer that does not cover all parts of the question adequately.
- **Be specific.** Write comments that are as detailed as the comments about the sample responses. Indicate where and how your study partner(s) are doing an inadequate job of answering the question. Writing notes in the margins of the answer sheet may also help.
- **Be supportive.** Include comments that point out what your study partner(s) got right.

Then plan one or more study sessions based on aspects of the questions on which group members performed poorly. For example, each group member might be responsible for rewriting one paragraph of a response in which someone else did an inadequate job.

Whether you decide to study alone or with a group, remember that the best way to prepare is to have an organized plan. The plan should set goals based on specific topics and skills that you need to learn, and it should commit you to a realistic set of deadlines for meeting those goals. Then you need to discipline yourself to stick with your plan and accomplish your goals on schedule.

5. Develop Your Study Plan

Develop a personalized study plan and schedule

Planning your study time is important because it will help ensure that you review all content areas covered on the test. Use the sample study plan below as a guide. It shows a plan for the *Core Academic Skills for Educators: Reading* test. Following that is a study plan template that you can fill out to create your own plan. Use the "Learn about Your Test" and "Test Specifications" information beginning on page 5 to help complete it.

Use this worksheet to:

- 1. Define Content Areas:** List the most important content areas for your test as defined in chapter 1.
- 2. Determine Strengths and Weaknesses:** Identify your strengths and weaknesses in each content area.
- 3. Identify Resources:** Identify the books, courses, and other resources you plan to use for each content area.
- 4. Study:** Create and commit to a schedule that provides for regular study periods.

Praxis Test Name (Test Code): Core Academic Skills for Educators: Reading (5712)

Test Date: 9/15/15

Content covered	Description of content	How well do I know the content? (scale 1–5)	What resources do I have/need for the content?	Where can I find the resources I need?	Dates I will study the content	Date completed
Key Ideas and Details						
Close reading	Draw inferences and implications from the directly stated content of a reading selection	3	Middle school English textbook	College library, middle school teacher	7/15/15	7/15/15
Determining Ideas	Identify summaries or paraphrases of the main idea or primary purpose of a reading selection	3	Middle school English textbook	College library, middle school teacher	7/17/15	7/17/15
Determining Ideas	Identify summaries or paraphrases of the supporting ideas and specific details in a reading selection	3	Middle and high school English textbook	College library, middle and high school teachers	7/20/15	7/21/15
Craft, Structure, and Language Skills						
Interpreting tone	Determine the author's attitude toward material discussed in a reading selection	4	Middle and high school English textbook	College library, middle and high school teachers	7/25/15	7/26/15
Analysis of structure	Identify key transition words and phrases in a reading selection and how they are used	3	Middle and high school English textbook, dictionary	College library, middle and high school teachers	7/25/15	7/27/15
Analysis of structure	Identify how a reading selection is organized in terms of cause/effect, compare/contrast, problem/solution, etc.	5	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/1/15	8/1/15
Author's purpose	Determine the role that an idea, reference, or piece of information plays in an author's discussion or argument	5	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/1/15	8/1/15

(continued on next page)

Content covered	Description of content	How well do I know the content? (scale 1–5)	What resources do I have/need for the content?	Where can I find the resources I need?	Dates I will study the content	Date completed
Language in different contexts	Determine whether information presented in a reading selection is presented as fact or opinion	4	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/1/15	8/1/15
Contextual meaning	Identify the meanings of words as they are used in the context of a reading selection	2	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/1/15	8/1/15
Figurative Language	Understand figurative language and nuances in word meanings	2	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/8/15	8/8/15
Vocabulary range	Understand a range of words and phrases sufficient for reading at the college and career readiness level	2	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/15/15	8/17/15
Integration of Knowledge and Ideas						
Diverse media and formats	Analyze content presented in diverse media and formats, including visually and quantitatively, as well as in words	2	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/22/15	8/24/15
Evaluation of arguments	Identify the relationship among ideas presented in a reading selection	4	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/24/15	8/24/15
Evaluation of arguments	Determine whether evidence strengthens, weakens, or is relevant to the arguments in a reading selection	3	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/27/15	8/27/15
Evaluation of arguments	Determine the logical assumptions upon which an argument or conclusion is based	5	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/28/15	8/30/15
Evaluation of arguments	Draw conclusions from material presented in a reading selection	5	High school textbook, college course notes	College library, course notes, high school teacher, college professor	8/30/15	8/31/15
Comparison of texts	Recognize or predict ideas or situations that are extensions of or similar to what has been presented in a reading selection	4	High school textbook, college course notes	College library, course notes, high school teacher, college professor	9/3/15	9/4/15
Comparison of texts	Apply ideas presented in a reading selection to other situations	2	High school textbook, college course notes	College library, course notes, high school teacher, college professor	9/5/15	9/6/15

My Study Plan

Use this worksheet to:

1. **Define Content Areas:** List the most important content areas for your test as defined in chapter 1.
2. **Determine Strengths and Weaknesses:** Identify your strengths and weaknesses in each content area.
3. **Identify Resources:** Identify the books, courses, and other resources you plan to use for each content area.
4. **Study:** Create and commit to a schedule that provides for regular study periods.

Praxis Test Name (Test Code): _____

Test Date: _____

Content covered	Description of content	How well do I know the content? (scale 1–5)	What resources do I have/need for this content?	Where can I find the resources I need?	Dates I will study this content	Date completed

(continued on next page)

Content covered	Description of content	How well do I know the content? (scale 1–5)	What resources do I have/need for the content?	Where can I find the resources I need?	Dates I will study the content	Date completed

6. Review Study Topics

Review study topics with questions for discussion

Using the Study Topics That Follow

The Middle School: Content Knowledge test is designed to measure the knowledge and skills necessary for a beginning teacher.

This chapter is intended to help you organize your preparation for the test and to give you a clear indication of the depth and breadth of the knowledge required for success on the test.

Virtually all accredited programs address the topics covered by the test; however, you are not expected to be an expert on all aspects of the topics that follow.

You are likely to find that the topics below are covered by most introductory textbooks. Consult materials and resources, including lecture and laboratory notes, from all your coursework. You should be able to match up specific topics and subtopics with what you have covered in your courses.

Try not to be overwhelmed by the volume and scope of content knowledge in this guide. Although a specific term may not seem familiar as you see it here, you might find you can understand it when applied to a real-life situation. Many of the items on the actual test will provide you with a context to apply to these topics or terms.

Discussion Areas

Interspersed throughout the study topics are discussion areas, presented as open-ended questions or statements. These discussion areas are intended to help test your knowledge of fundamental concepts and your ability to apply those concepts to situations in the classroom or the real world. Most of the areas require you to combine several pieces of knowledge to formulate an integrated understanding and response. If you spend time on these areas, you will gain increased understanding and facility with the subject matter covered on the test. You may want to discuss these areas and your answers with a teacher or mentor.

Note that this study companion *does not provide answers for the discussion area questions*, but thinking about the answers to them will help improve your understanding of fundamental concepts and will probably help you answer a broad range of questions on the test.

Study Topics

An overview of the areas covered on the test, along with their subareas, follows.

I. Literature and Language Studies

Focus is on literature, language, and components of written and oral communication. Literature includes both expository and narrative texts and the written materials of all disciplines. Language Studies includes the processes of language development and the uses of language in written and oral communication. Questions allow examinees to demonstrate their knowledge and understanding of literature and language as well as their ability to think critically about relevant problems and to apply the principles of the language arts within diverse contexts.

A. Literature (35%)

1. Literary concepts, conventions, terminology
2. Assumptions and conventions of primary literary genres, including children's literature
3. Social/historical contexts as they relate to literature
4. Approaches to reading and interpreting literature

B. Language and linguistics (30%)

1. Basic stages of language development, including factors that enhance or inhibit this development
2. Historical and cultural influences on the evolution of standard American English
3. Principles of linguistics in analyzing various textual contexts
4. Integration of language across disciplines

C. Oral and written communication (35%)

1. Application of communication skills to analysis and production of written text
2. Application of communication skills to analysis of oral discourse
3. Rhetorical conventions of narration, exposition, reflection, and argumentation
4. Retrieval of information from print and nonprint sources
5. Interpretation of the written reports of research

Discussion areas: Literature and Language Studies

- What specific and practical classroom activities can you envision using to teach a text such as Jack London's *The Call of the Wild*? For teaching Gwendolyn Brooks' "We Real Cool"?
- What are the phases of language development, especially for middle school students learning English?
- What are the characteristics of a middle school student new to the United States who is learning English and who is said to have "beginning proficiency" in English? "Intermediate proficiency"? "Advanced proficiency"?
- What are the most common errors that middle school students make in agreement and punctuation? What are some strategies for helping them to address these difficulties?
- How can meaning be affected by word order in a sentence?
- What is jargon? What are examples of jargon used in everyday language?
- What are some examples of ambiguity? What causes a sentence to be ambiguous?
- Why is reading important in a math class?
- What role does vocabulary play in a science class?
- How does the purpose or intended audience for a piece of writing shape its form?
- How does the discourse of the circumstances one writes for (professional, personal, creative) affect the form and tone of the writing?
- Select essays from books or journals and identify the author's main idea. Think about the ways in which authors support their arguments.
- How do stereotypes and biases interfere with constructing persuasive points of view?

II. Mathematics

Focus is on the mathematical understandings that middle school teachers must have, the ability to communicate these understandings, and the ability to solve mathematical problems.

Because the emphasis is on assessing the examinee's ability to reason logically, to use mathematical techniques in problem solving, and to communicate mathematical ideas effectively, examinees are not required to do much computation. Examinees may use non-programmable calculators while taking the test; a basic four-function calculator will be adequate.

The test questions do not require knowledge of advanced-level mathematics vocabulary but may require examinees to relate mathematics to real-life situations. Mathematics is conceptualized as an integrated field; therefore, a single problem may test several mathematical content areas.

Although few technical words are used in the test questions, terms such as area, perimeter, ratio, integer, factor, and prime number are used because it is assumed that these are commonly encountered in the mathematics that all examinees have studied.

A. Number sense and numeration (20%)

1. Understand the meaning/implication of number and number concepts as they relate to problem solving, using cardinal and ordinal numbers, place value, ordering of fractions, decimals, whole numbers

B. Geometry (20%)

1. Knowledge of relationships in both two and three dimensions
2. Ability to draw inferences based on precepts/concepts of parallelism, perpendicularity, congruence and similarity, angle measures, and polygons

C. Measurement (5%)

1. Knowledge and application of standard units of both the English and metric systems, nonstandard units, estimation, perimeter, area, volume, mass, weight, angle measure, time, temperature

D. Algebraic concepts (10%)

1. Recognize and apply algebraic concepts and properties
2. Describe patterns by writing or identifying a formula

E. Number theory (10%)

1. Problem solving that demonstrates an understanding of prime and composite numbers, divisibility rules, least common multiple, greatest common divisor, and set theory

F. The real number system and its subsystems (20%)

1. Solve real-world situational problems
2. Work with both standard and alternate algorithms

G. Probability and statistics (15%)

1. Understand the organization, presentation, and interpretation of data in various forms
2. Recognize valid and invalid inferences
3. Solve basic problems
4. Make predictions involving probability and statistics

Discussion areas: Mathematics

- Be able to correctly solve problems involving the basic operations of addition, subtraction, multiplication, and division
- What are the common mistakes and misconceptions that students have in performing basic operations?
- Can you find the value of $\frac{44.2}{17}$?
- Be able to correctly solve problems involving the basic operations on fractions
- What is the procedure for finding a common denominator and adding or subtracting fractions?
- What are the common mistakes and misconceptions that students have in performing basic operations with fractions?
- Can you find the value of $\frac{1}{3} - \frac{2}{7}$?
- Can you find the value of $\frac{\frac{2}{3}}{\frac{4}{5}}$?
- Be able to use ratios, proportions, and percents to solve real-world problems

- Be able to rank order data sets and lists of numbers
- Be able to determine the place value of individual digits
- What digit is in the hundredths place of 4,562.01327?
- Be able to convert from fractions to decimals, decimals to fractions, and fractions to percents
- For example, if $\frac{3}{8}$ of all students in a class are male, what percent of the students in the class are female?
- Be able to place fractions and/or decimals in the proper order on the number line
- Which is larger, $\frac{2}{5}$ or 0.25 ?
- Be able to use estimation to determine if an answer is reasonable
- Be able to use rounding to provide answers to the nearest unit required
- Be able to identify congruent angles given two parallel lines and a transverse line
- Be able to identify congruent triangles using the congruence theorems and postulates, e.g., Side-Angle-Side or Side-Side-Side
- Be able to determine the measure of an angle in a triangle given the measures of the other two angles
- Be able to apply the standard rules for comparing the sides of similar triangles
- If triangle ABC is similar to triangle DEF and $AB = 2$, $BC = 5$, and $DE = 3$, can you find the length of side EF ?
- Be able to use the standard formulas for the area and perimeter of two-dimensional figures.
- If a rectangle has an area of 36 square inches and the length of the rectangle is 5 inches more than the width, can you find the perimeter of the rectangle?
- Be able to use the standard formulas for the volume and surface area of three dimensional figures.
- Can you find the volume of a cylinder of radius 4 and height 5 ?
- Be able to find the missing length of a side of a right triangle given the length of the other two sides
- Can you find the length of the diagonal of a square with side of length 8 ?
- Be able to find the height of an isosceles or equilateral triangle given the length of the sides
- Be able to find the area of an isosceles or equilateral triangle given the length of the sides
- Be able to apply the triangle inequality
- If an isosceles triangle has sides of integer length and two of the sides each have length 5, can you find the largest possible length for the third side?
- Be able to solve measurement problems in context
- Be able to use conversion factors and/or provided formulas to solve measurement problems
- Be able to convert feet to inches, meters to centimeters, hours to seconds
- Be able to solve an algebraic equation for one variable in terms of another
- Be able to identify and use the commutative, associative, and distributive properties in order to solve algebraic equations
- Can you find y in terms of x if $3x + 2y + 5 = 10$?
- Can you solve equations such as $2x - 0.35 = \frac{1}{5}$?
- Solve problems such as: If a car has been traveling for 20 minutes at a constant rate of 45 miles per hour, how many miles has it traveled?
- Can you solve equations such as $x^2 - 5x + 6 = 0$?

- What is the y-intercept of the graph of the parabola $y = -x^2 - x - 1$ in the xy -plane?
- What is the y-intercept of the graph of the line $4x - 3y + 7 = 0$ in the xy -plane?
- What is the equation of a line in the xy -plane perpendicular to the line $y = 2x + 3$ passing through the point $(-1, -1)$?
- Can you describe the set of all values of x so that $4 - x^2 \leq 0$?
- Be able to translate word problems into algebraic equations
- Be able to distinguish between prime and composite numbers
- Be able to list all prime numbers greater than 1 and less than 100
- Be able to determine if an integer is divisible by 2, 3, 5 or 9
- Can you find the prime factorization of 336?
- Can you find the least common multiple of 11 and 24?
- Can you find the greatest common divisor of 100 and 75?
- Be able to use approximations of π and $\sqrt{2}$ to solve real-world problems
- If a swimming pool is in the shape of a right circular cylinder with a radius 10 feet and a depth of 6 feet, can you find the volume of the pool to the nearest cubic foot?
- Be able to use scientific notation and order of magnitude approximation to solve problems involving very large or very small numbers
- Be able to solve problems using the notions of intersection and union of sets
- Can you draw a Venn diagram to illustrate the relationships among the set of integers, the set of rational numbers, and the set of real numbers?
- Can you calculate the weighted mean of a data set presented in a histogram?
- Can you find the mode of a list of numbers presented in a frequency table?
- Can you use line graphs to determine trends and make inferences?
- Be able to calculate the probability of an event as the number of favorable outcomes divided by the number of possible outcomes
- Be able to calculate the probability of outcomes of mutually exclusive events and/or independent events

III. History/Social Studies

Focus is on essential understanding of important historical events and issues and basic social science concepts. Because history and the social sciences are best seen as mutually enriching, most questions will require knowledge of both history and the social sciences.

Since critical thinking skills are integral to essential understandings, most questions will require the exercise of such skills. In many instances, examinees will be asked to utilize these skills in demonstrating an understanding of original documents, such as maps, charts, graphs, cartoons, and short quotations.

History: all questions in the History/Social Studies area require knowledge of history except for one question that has a non-historical perspective.

A. United States history (50%)

1. Native American civilizations
2. European exploration and colonization
3. The American revolution and the founding of the nation
4. Growth of the new republic
5. The Civil War and Reconstruction: causes and consequences
6. Industrialization of America
7. World War I: causes and consequences
8. Post-World War I America
9. World War II: causes and consequences
10. Post-World War II America

B. World history (45%)

1. Prehistory and the development of early civilizations
2. Classical civilizations
3. Development of world religions
4. Feudalism in Japan and Europe
5. Chinese and Indian empires
6. Sub-Saharan kingdoms and cultures
7. Islamic civilization
8. Civilizations of the Americas
9. Rise and expansion of Europe

10. European developments
11. Nationalism and imperialism
12. 20th-century ideologies and conflicts

C. Nonhistorical perspective (5%)

1. Social science questions not posed in historical context

Social Sciences: most questions in the History/Social Studies area require knowledge of social science as well as history. For those questions that require knowledge of both history and social science, the approximate percentages that require knowledge in each social science area are given below.

D. Government and politics (20%)

1. Political concepts and theories
2. United States political system

E. Geography (35%)

1. Map and globe skills
2. Physical geography
3. Cultural geography
4. Political geography
5. Economic geography
6. Regional geography

F. Economics (25%)

1. Basic economic concepts
2. Government's role in the economy

G. Anthropology and sociology (20%)

1. Definitions, research methods, techniques of study
2. Human culture, social organization
3. How cultures change

Discussion areas: History/Social Studies

- Make your own timeline of United States history, starting with space for each century: 1400s, 1500s, 1600s, etc., (recognizing, of course, that Native Americans were here for thousands of years before that). Put the events listed in the study topics on your timeline in the correct century, then trace and describe in your own words important trends in cultural, intellectual, social, economic, political, and diplomatic history.

- Other trends to identify and describe in your timeline might include
 - Migration—patterns and effects
 - Technology—important developments and their effects
 - Urbanization—patterns and effects
 - Religions—dominant religions, conflicts with each other and government, influence on society and politics
 - The emergence of the United States as a world leader in the areas of military power, industry, finance, and politics
 - The significance of the following dates in United States history: 1607, 1776, 1787, 1803, 1861–65, 1914–18, 1929, 1941–45
- What were the major similarities and differences in the economies, religions, governments, and cultures of native North American societies?
- What events occurring outside of the Americas caused Europeans and others to come to America?
- How were the New England, the middle, and the southern colonies different from each other? How were they similar?
- What were the weaknesses in the Articles of Confederation that eventually led to its replacement by the Constitution? How were the colonists' problems and frustrations with the British reflected in the articles?
- What were the major differences between the Federalists and Anti-Federalists?
- What are *The Federalist* papers and what are the most important principles expressed in them?
- Read the Constitution carefully in its entirety if you have not already done so.
- How did the Constitution deal with the issues of representation of slaves and the importation of slaves?
- What were the political and economic causes and outcomes of the War of 1812?
- How did Jacksonian Democracy influence United States social, political, and economic life?
- What was "Manifest Destiny" and how did it influence the expansion of United States territory?
- What was the impact of westward expansion on the United States economy?
- How did the outcome of the Mexican War affect sectionalism and the politics of western expansion and slavery between 1848 and 1860?
- What long-term trends or developments contributed to the growth of sectionalism?
- How did the regions try to resolve differences? How and why did those efforts succeed or fail?
- What were the roles of John C. Calhoun, Henry Clay, and Daniel Webster?
- What were the abolitionists' arguments? How did they pursue their agenda?
- What was the role of women in the abolitionist movement?
- What was the impact of the abolitionists' movement on the events of the period?
- What were the advantages that each side, the North and the South, enjoyed before the war began? What were each side's disadvantages?
- How did these shift during the war? How did they affect the outcome of the war?
- What did Reconstruction plans and policies accomplish, and where did they fail?
- What were the short- and long-term effects of the Compromise of 1877?
- What did the court rule in the case of *Plessy v. Ferguson*? How did the outcome of this case affect Americans for the next 58 years? What case overturned *Plessy v. Ferguson*?
- What were the "push" and "pull" factors that contributed to late-nineteenth-century immigration to the United States?

- On your timeline of United States history, take particular care with the immigration patterns in the nineteenth century, noting the decades during which immigrants from various countries or regions came to the United States in large numbers.
- Late-nineteenth-century immigration to the United States can be viewed in terms of creating a “melting pot” or a “pluralist” or “multicultural” society. What does this distinction mean, and why is it important?
- What reforms did Susan B. Anthony, W. E. B. DuBois, and Robert LaFollette lead?
- Compare and contrast Populism and Progressivism.
- What were the major successes, failures, and legacies of the New Deal?
- How were the “domino theory” and the policy of containment applied to United States foreign policy from the 1950s through the 1970s?
- What roles did individuals such as Ralph Nader, Rachel Carson, Betty Friedan, Dennis Banks, and Cesar Chavez play in social reform movements of the period?
- Why did the voting blocs supporting the major political parties become realigned beginning in the 1960s?
- Work with a globe or world map as you study and review world history. It would be especially useful to use a historical atlas so that you can see a place or region in its historical context. In addition, many recent world history textbooks have excellent maps. Find regions and places you are studying on the globe and make sure you understand the locations, movements, and relationships among the many societies you are reviewing.
- Think carefully about the periods into which this history is divided. You will probably find alternative schemes—that is, different names and year spans—in the materials you use for review. Why do historians divide history into periods? Do they agree on the names and dates of some periods more than on others? What do the periods say about historical interpretation? How do periods relate to long-term trends?
- Explain the significance of the following dates in world history: 220 C.E. and 476 C.E., 622 C.E., 1096–1099 C.E., 1200–1300, 1453, 1492, 1750–1780, 1789, 1870s, 1914–18, 1939–45, 1947, 1957, 1989.
- How did geography influence the civilizations of Egypt, Greece, and Rome?
- What similarities can you find in the establishment and influence of the Roman and Han empires? What factors led to the decline of these two empires?
- What factors led to the expansion of Islamic influence into India, North Africa, and sub-Saharan Africa?
- What similarities and differences were there in the practice of feudalism in Europe and Japan?
- How did the writings of Thomas Hobbes and John Locke influence the eighteenth-century Enlightenment philosophers?
- What were the key inventions that contributed to the rapid technological change described as the Industrial Revolution?
- What consequences did industrialization have for population distribution and the birth rates of industrializing nations?
- How did the treaties ending the First World War change the map of Europe?
- What factors contributed to political and economic instability in the world between 1918 and 1939?
- What similarities and differences are there in the causes and outcomes of the Chinese, Russian, and Mexican revolutions?
- Why were the colonies of European powers in Africa and Asia more successful in gaining independence after the Second World War than after the First World War?
- How did the end of the Cold War bring about changes in the political map of Europe?
- What are the main ideas of each theorist as they contribute to the development of forms of government and their institutions?

- Where did the ideas of sovereignty and social contract found in the United States Constitution come from?
- Where did the concepts of checks and balances and the separation of powers come from?
- How did the concepts of Marx and Lenin influence various forms of government in the twentieth century?
- What are the core ideas of each political orientation?
- What sorts of government or policy would each support, and why?
- What are the formal powers of each branch?
- What are the functions of checks and balances and the separation of powers?
- What are some examples of how the three branches check and balance each other?
- What impact do these relationships have on policy, responsibility, and authority? How have the relationships developed and changed over time? What factors drove those changes?
- What was the court's ruling in each of these cases? What were the short- and long-term effects of each?
- How could the rulings in these cases be modified by later Supreme Court rulings? What would cause this to happen?
- Be able to read and interpret various types of maps, including globe, climate, political, physical or topographic (including those with contour lines), thematic, and satellite maps.
- How are the imaginary lines of latitude and longitude organized on Earth to identify the absolute location of a place?
- Locate maps with scales for miles and kilometers. Practice measuring distances using each measurement of distance.
- Locate maps with keys for such factors as elevation, vegetation, climate zones. Practice drawing conclusions from the data illustrated by the key.
- Be able to define and distinguish between different types of landforms, including continents, isthmuses, peninsulas, plains, plateaus, and steppes.
- Be able to define and distinguish between different types of bodies of water and waterways, including oceans, seas, bays, estuaries, straits, canals, and rivers.
- How have the use, distribution, and importance of natural resources changed since the beginning of the twentieth century?
- What is the difference between weather and climate?
- Explain how each of the following factors influences climate: latitude, ocean currents, winds, mountains, elevation, and proximity to water.
- What cultural factors are commonly used to organize the world into cultural regions?
- What are the types of natural and artificial boundaries?
- What are the advantages and disadvantages of each type?
- Compare formal, or uniform, and functional regions.
- Why does the problem of scarcity force people to consider opportunity cost?
- How does an increase or decrease in productivity affect efforts to overcome the problem of scarcity?
- Why do people engage in exchange?
- What are the sources of gain from trade?
- What are the methods of economic organization? How do they differ?
- Why do nations impose trade restrictions? What impact do trade restrictions have on the economy?
- What are the laws of supply and demand?
- How is the market price of a good determined?

- How do markets adjust to changes in demand? How do markets adjust to changes in supply?
- What happens when prices are set above the market equilibrium price?
- What happens when prices are set below the market equilibrium price?
- How does the imposition of a tax affect a market?
- What are the differences between progressive, proportional, and regressive taxes?
- What is the difference between fiscal and monetary policy?
- What do economists expect the use of expansionary or contractionary policies to achieve?
- What effect can government spending have on the economy?
- What are the major functions of the Federal Reserve System?
- What are the major tools the Federal Reserve can use to control the supply of money?
- How do social institutions take part in the socialization of an individual into society?
- How does the socialization process change throughout the life cycle?
- What factors are commonly used in societies to establish social stratification?
- What part does ascribed or achieved status play in the degree of social mobility for an individual?

IV. Science

Focus is on the ability to demonstrate an understanding of scientific concepts, apply those concepts, identify problems, formulate and test hypotheses, design experiments, analyze and evaluate data, use both theoretical and practical models, and use instruments. Also includes the impact of science and technology on society and the environment. Because science is viewed as an integrated field, a single question may assess understanding of several content areas.

A. Life Science (33–34%)

1. Cellular biology: biologically important molecules, structure and function of cells and their organelles, energy sources and processes, and genes and gene function
2. Biology of organisms: life forms, structure and function of organ systems, and basic principles of heredity
3. Ecology, interrelationships in the biosphere: characteristics of ecosystems, energy flow in biological communities, and characteristics of biological communities
4. Evolution: evolutionary mechanisms, evolutionary patterns, evidence for evolutionary change, and history of life as related to the geological timeline

B. Earth and Space Science (33–34%)

1. Astronomy: the solar system and planetary systems, stars and galaxies, and cosmology
2. Geology: earth materials, internal processes, landforms and external processes, and the history of the Earth and its life-forms
3. Meteorology: atmospheric composition and structure, atmospheric movement, and weather and climate
4. Oceanography: biological, chemical, geological, and physical processes and characteristics

C. Physical Science (33–34%)

1. Matter: characteristics, structure, and physical and chemical properties
2. Reactions and interactions: kinetic theory, changes in state, chemical reactions, oxidation and reduction, acids and bases, catalysts, and chemical bonding
3. Macromechanics: straight line, projectile, circular, and periodic motion, Newton's laws of motion, gravity, weight, mass, and conservation laws
4. Energy: sources and transformations, and heat
5. Electricity and magnetism: static and current electricity, circuits, magnetism, and applications
6. Wave phenomena: electromagnetic spectrum, mirrors, lenses, sound production, and applications
7. Modern physics/nuclear chemistry: relativity, radioactivity, fusion, and fission

Discussion areas: Science

- What unit is equivalent to 1/1,000th of a gram?
- How would you prepare 500 mL of a 3 M NaCl solution?
- What is a graduated cylinder used for?
- How are physical changes in a substance different from chemical changes?
- How are kinetic energy and potential energy different?
- What energy changes occur to a mass that starts from rest and slides without friction from the top to the bottom of an inclined plane? What additional energy changes occur when there is friction between the mass and the inclined plane?
- If 100 g of water at 20°C absorbs 5 kJ of heat, by what amount will the temperature of the water increase?
- When a reaction in solution produces energy, what happens to the temperature of the solution?
- How many neutrons are in ${}^{14}_6\text{C}$?
- What are the formulas of compounds that form between Cl and elements that have one electron in their outer electron shell?
- Of the atoms He, H, Li, and Be, which is the smallest?
- What is an example of a nuclear reaction involving beta decay? Alpha decay?
- If a 100 g sample of a radioactive element decays to 25 g in 4 days, what is the half-life of the element?
- How does mass affect the acceleration of a falling object?
- What is meant by the term “terminal velocity”?
- A ball is dropped and another ball of smaller mass is fired horizontally from the same height. Which ball has a greater acceleration when it hits the ground? Which ball hits the ground first?
- What variables affect the period of a pendulum?
- What forces act on a frictionless air puck as it moves across a table at constant speed in a straight line?
- Why is it more difficult to slide a crate starting from rest than it is to keep it moving once it is sliding?
- If the speed of an object is doubled, by what factor does its kinetic energy change?
- Which requires more work: lifting a 100-kilogram sack a vertical distance of 2 meters or lifting a 50-kilogram sack a vertical distance of 4 meters?
- If the momentum of a 2,500 kg car is equal to the momentum of a 1,500 kg car moving at 5 m/s, what must be the speed of the 2,500 kg car?
- When a moving object collides with an object at rest, is it possible for both objects to be at rest after the collision?
- What is the difference between an elastic collision and an inelastic collision?
- What happens to the angular velocity of a rotating platform as a person walks from the outer rim of the platform toward the center of the platform?

- If the distance between two masses is doubled, what happens to the gravitational force between the two masses?
- Why does a sheet of paper on a table rise when air is blown across the top surface of the paper?
- If the distance between two charges is halved, what happens to the electrostatic force between the two charges?
- If three 10-ohm resistors are connected in parallel, what is the equivalent resistance of the parallel combination?
- Why are metals good conductors of heat and electricity?
- Describe the orientation of the magnetic field lines of a bar magnet.
- When a bar magnet is moved toward a stationary conducting loop, in which direction does the induced current in the loop flow?
- Why does the sky appear blue when viewed from the surface of Earth?
- What is the fundamental difference between interference and diffraction?
- How do polarized sunglasses reduce the glare from reflective surfaces, such as the surface of a lake?
- When you blow over a bottle, what happens to the frequency of the sound produced as you fill the bottle with water?
- What is the range of wavelengths of visible light?
- What color light is transmitted through a piece of blue glass? Why?
- What is always true of the images formed by concave lenses?
- Describe image formation in a plane mirror.
- Does the size of the image in a plane mirror change as the object moves away from the mirror?
- What is the relationship between the position of an element on the periodic table and the distribution of electrons in the atoms of the element?
- Of the elements Na, Mg, Al, P, S, and Cl, which has the highest first ionization energy?
- Of the elements K, Fe, Cu, and Ag, which will react most readily with Cl?
- How many oxygen atoms are in 3 moles of CO₂?
- How many H atoms are in calcium hydroxide, Ca(OH)₂?
- What is the formula for sodium oxide?
- Of the compounds Na₂S, Na₂SO₄, and Na₂SO₃, which is called sodium sulfate?
- What are the molecular formulas for ethanol, ethanal, and butane?
- What kinds of bonding are exhibited by the compounds KCl, MgO, CO₂, and H₂?
- What are the arrangement and motions of molecules of substances in the solid phase? Liquid phase? Gaseous phase?
- If a sample of gas is heated at a constant pressure, what will happen to the volume of the gas?
- What effect does the rate of evaporation have on the size of salt crystals that form when water evaporates from a saltwater solution?
- Balance the following equation:

$$\text{Na} + \text{MgSO}_4 \rightarrow \text{Mg} + \text{Na}_2\text{SO}_4$$
- In general terms, what will happen to the chemical equilibrium

$$2 \text{NO}_2(\text{g}) \rightarrow \text{N}_2\text{O}_4(\text{g}) + 58 \text{ kJ}$$
if the temperature, pressure, or concentration of one of the reactants is changed?
- In an electrochemical cell, $\text{Cd} \rightarrow \text{Cd}^{2+}$, is Cd oxidized or reduced?
- If a solute is completely dissolved in a solvent, is the solution saturated or unsaturated?
- Why is ammonia gas very soluble in water while oxygen, O₂, is only slightly soluble?

- Will a substance dissolve faster if it is ground into a powder first?
- Will increasing temperature always increase solubility?
- What is the general function of buffer mixtures?
- What will happen to the pH of an aqueous solution of HCl when a base such as NaOH is added?
- What structures would you expect to find in a typical plant cell but not in an animal cell? What functions do these unique structures carry out for the plant?
- If you were stranded in a lifeboat on the ocean, why would drinking the ocean water be more harmful than not drinking the water?
- What are the major differences between “normal” cells and cancerous cells? Chemotherapy is the use of chemicals to kill rapidly dividing cells. In addition to killing many types of cancer cells, why does chemotherapy treatment cause side effects such as anemia, gastrointestinal distress, and hair loss?
- At the cellular level, what is the benefit of exercising aerobically? Why do muscles become “sore” after excessive exercise?
- What makes bread “rise” before it is baked?
- Describe Watson and Crick’s model for DNA structure.
- How are Mendel’s laws related to the behavior of chromosomes during the formation of gametes?
- What percentage of offspring will have blood type A if the parents have blood types AB and O? What percentage will have blood type O?
- How has recombinant DNA technology been used to solve criminal cases? To treat diabetes?
- A small percentage of individuals with Down syndrome possess a chromosomal translocation in which a copy of chromosome 21 becomes attached to chromosome 14. How does this translocation occur?
- A radioactive meteorite falls to Earth and kills 90 percent of a secluded population of salamander. What mechanisms are in action changing allelic frequency in this population’s gene pool?
- Explain the following concepts relative to Darwin’s theory of the origin of species: a) Descent with modification, b) Struggle for existence, and c) Survival of the fittest
- How would the presence of molecular oxygen, O₂, in the atmosphere affect early living things?
- What are the limitations of the five-kingdom system? Current debates about revising the five-kingdom system center mainly on which groups of organisms?
- Consider a seed planted upside down three inches under the soil. When the seed germinates, why does the root grow downward into the soil while the shoot grows upward?
- Under what environmental conditions would you expect the transpiration rate to be the highest in an average-sized oak tree? The lowest?
- Why must the human body digest large macromolecules into small monomers before it can use them? What enzymes does the human body use to digest these macromolecules?
- Of proteins, carbohydrates, fats, and alcohols, which type of nutrient has the highest caloric value per gram?
- What are the structural and functional differences between the three muscle types, i.e., skeletal, smooth, and cardiac?

- What are some genetic, lifestyle, and internal physiological factors that can lead to hypertension (high blood pressure)? If hypertension is uncontrolled, what health problems can occur? What types of treatments exist to help control hypertension?
- Why are insulin and glucagon considered “antagonistic” hormones? Are there other such hormone pairs in the human body?
- What is the principle of competitive exclusion?
- How have humans accelerated the process of the greenhouse effect? What is the environmental impact of this accelerated greenhouse effect?
- Create a food web, with organisms placed within an appropriate trophic level, with the following organisms: zooplankton, eagle, freshwater shrimp, green algae, goose, mouse, beetle, bacteria, trout, bear, and mushroom. What would the pyramids of number, biomass, and energy look like for this ecosystem? Describe the levels of DDT you would find in the tissues of the members of the community if the pesticide DDT were introduced into this food web.
- Compare the types of vegetation encountered with increasing altitude (e.g., traveling up a mountainside) and with increasing latitude (i.e., traveling from the Equator toward the North Pole).
- What makes a topographic map different from any other map? Why is a topographic map useful to a geologist?
- What are the source materials for the ingredients of sedimentary rocks?
- What does the behavior of seismic waves reveal about the structure and physical characteristics of Earth’s interior?
- What evidence exists for “continental drift” and how is continental drift different from plate tectonics?
- What processes occur at plate boundaries?
- What are the major agents of erosion?
- What is radioactive dating and how is it used to provide dates for the geologic time scale?
- How can fossils be useful to a geologist in correlating the north and south walls of the Grand Canyon?
- Why do waves break as they approach the shore?
- How do the Sun and Moon influence tides? Why, in general, do two high tides occur at a given location every day?
- What is the Coriolis effect and how does it affect Earth’s surface waters?
- What are black smokers and how do they form?
- What is seafloor spreading? Explain the origin of the rift valley in the center of the mid-oceanic ridge.
- List the layers of the atmosphere and discuss the temperature changes within each.
- How does the Sun influence global and local winds?
- Why do weather systems generally move across the United States from west to east?
- Compare and contrast tornadoes and hurricanes.
- What weather would you predict for the next day if you observed a lowering sequence of stratiform clouds over a day or two?
- What influence does one or more of the following have on the climate of a region: ocean currents, landforms, and world wind belts?
- How does a volcanic eruption affect both regional and worldwide climate conditions?
- How far does light travel in a light-year?
- What information about stars and their life cycle can be obtained from a Hertzsprung-Russell (H-R) diagram?
- How do the Sun and other stars generate their energy?
- Why do lunar and solar eclipses not occur every month?

- Compare the temperature and length of the day at the North Pole, the midlatitudes, and the Equator on June 21 and on December 21.
- Why does the length of daylight change from day to day?
- What is the relationship between a time zone, longitude, and Earth's rotation?
- What limitation of Earth-based telescopes has been solved by the Hubble space telescope?
- Compare the availability and limitation of the following sources of power: geothermal, nuclear, hydroelectric, solar, and fossil fuel.
- Since plastic products do not readily decompose in waste sites, what is an alternative for plastic disposal?
- Compare and contrast the depletion of mineral resources with that of fossil fuels.
- Give examples of how events such as the clear-cutting of the tropical rain forests and building of nuclear energy plants have had both positive and negative impacts on humans and the environment.

7. Review Smart Tips for Success

Follow test-taking tips developed by experts

Learn from the experts. Take advantage of the following answers to questions you may have and practical tips to help you navigate the *Praxis* test and make the best use of your time.

Should I guess?

Yes. Your score is based on the number of questions you answer correctly, with no penalty or subtraction for an incorrect answer. When you don't know the answer to a question, try to eliminate any obviously wrong answers and then guess at the correct one. Try to pace yourself so that you have enough time to carefully consider every question.

Can I answer the questions in any order?

You can answer the questions in order or skip questions and come back to them later. If you skip a question, you can also mark it so that you can remember to return and answer it later. Remember that questions left unanswered are treated the same as questions answered incorrectly, so it is to your advantage to answer every question.

Are there trick questions on the test?

No. There are no hidden meanings or trick questions. All of the questions on the test ask about subject matter knowledge in a straightforward manner.

Are there answer patterns on the test?

No. You might have heard this myth: the answers on tests follow patterns. Another myth is that there will never be more than two questions in a row with the correct answer in the same position among the choices. Neither myth is true. Select the answer you think is correct based on your knowledge of the subject.

Can I write on the scratch paper I am given?

Yes. You can work out problems on the scratch paper, make notes to yourself, or write anything at all. Your scratch paper will be destroyed after you are finished with it, so use it in any way that is helpful to you. But make sure to select or enter your answers on the computer.

Smart Tips for Taking the Test

- 1. Skip the questions you find extremely difficult.** Rather than trying to answer these on your first pass through the test, you may want to leave them blank and mark them so that you can return to them later. Pay attention to the time as you answer the rest of the questions on the test, and try to finish with 10 or 15 minutes remaining so that you can go back over the questions you left blank. Even if you don't know the answers the second time you read the questions, see if you can narrow down the possible answers, and then guess. Your score is based on the number of right answers, so it is to your advantage to answer every question.

2. **Keep track of the time.** The on-screen clock will tell you how much time you have left. You will probably have plenty of time to answer all of the questions, but if you find yourself becoming bogged down, you might decide to move on and come back to any unanswered questions later.
3. **Read all of the possible answers before selecting one.** For questions that require you to select more than one answer, or to make another kind of selection, consider the most likely answers given what the question is asking. Then reread the question to be sure the answer(s) you have given really answer the question. Remember, a question that contains a phrase such as “Which of the following does NOT . . .” is asking for the one answer that is NOT a correct statement or conclusion.
4. **Check your answers.** If you have extra time left over at the end of the test, look over each question and make sure that you have answered it as you intended. Many test takers make careless mistakes that they could have corrected if they had checked their answers.
5. **Don’t worry about your score when you are taking the test.** No one is expected to answer all of the questions correctly. Your score on this test is not analogous to your score on the *GRE*[®] or other tests. It doesn’t matter on the *Praxis* tests whether you score very high or barely pass. If you meet the minimum passing scores for your state and you meet the state’s other requirements for obtaining a teaching license, you will receive a license. In other words, what matters is meeting the minimum passing score. You can find passing scores for all states that use the *Praxis* tests at http://www.ets.org/s/praxis/pdf/passing_scores.pdf or on the web site of the state for which you are seeking certification/licensure.
6. **Use your energy to take the test, not to get frustrated by it.** Getting frustrated only increases stress and decreases the likelihood that you will do your best. Highly qualified educators and test development professionals, all with backgrounds in teaching, worked diligently to make the test a fair and valid measure of your knowledge and skills. Your state painstakingly reviewed the test before adopting it as a licensure requirement. The best thing to do is concentrate on answering the questions.

8. Check on Testing Accommodations

See if you qualify for accommodations that may make it easier to take the Praxis test

What if English is not my primary language?

Praxis tests are given only in English. If your primary language is not English (PLNE), you may be eligible for extended testing time. For more details, visit www.ets.org/praxis/register/plne_accommodations/.

What if I have a disability or other health-related need?

The following accommodations are available for *Praxis* test takers who meet the Americans with Disabilities Act (ADA) Amendments Act disability requirements:

- Extended testing time
- Additional rest breaks
- Separate testing room
- Writer/recorder of answers
- Test reader
- Sign language interpreter for spoken directions only
- Perkins Braille
- Braille slate and stylus
- Printed copy of spoken directions
- Oral interpreter
- Audio test
- Braille test
- Large print test book
- Large print answer sheet
- Listening section omitted

For more information on these accommodations, visit www.ets.org/praxis/register/disabilities.

Note: Test takers who have health-related needs requiring them to bring equipment, beverages, or snacks into the testing room or to take extra or extended breaks must request these accommodations by following the procedures described in the *Bulletin Supplement for Test Takers with Disabilities or Health-Related Needs* (PDF), which can be found at http://www.ets.org/s/disabilities/pdf/bulletin_supplement_test_takers_with_disabilities_health_needs.pdf.

You can find additional information on available resources for test takers with disabilities or health-related needs at www.ets.org/disabilities.

9. Do Your Best on Test Day

Get ready for test day so you will be calm and confident

You followed your study plan. You prepared for the test. Now it's time to prepare for test day.

Plan to end your review a day or two before the actual test date so you avoid cramming. Take a dry run to the test center so you're sure of the route, traffic conditions, and parking. Most of all, you want to eliminate any unexpected factors that could distract you from your ultimate goal—passing the *Praxis* test!

On the day of the test, you should:

- be well rested
- wear comfortable clothes and dress in layers
- eat before you take the test
- bring an acceptable and valid photo identification with you
- bring an approved calculator only if one is specifically permitted for the test you are taking (see Calculator Use, at http://www.ets.org/praxis/test_day/policies/calculators)
- be prepared to stand in line to check in or to wait while other test takers check in

You can't control the testing situation, but you can control yourself. Stay calm. The supervisors are well trained and make every effort to provide uniform testing conditions, but don't let it bother you if the test doesn't start exactly on time. You will have the allotted amount of time once it does start.

You can think of preparing for this test as training for an athletic event. Once you've trained, prepared, and rested, give it everything you've got.

What items am I restricted from bringing into the test center?

You cannot bring into the test center personal items such as:

- handbags, knapsacks, or briefcases
- water bottles or canned or bottled beverages
- study materials, books, or notes
- pens, pencils, scrap paper, or calculators, unless specifically permitted for the test you are taking (see Calculator Use, at http://www.ets.org/praxis/test_day/policies/calculators)
- any electronic, photographic, recording, or listening devices

Personal items are not allowed in the testing room and will not be available to you during the test or during breaks. You may also be asked to empty your pockets. At some centers, you will be assigned a space to store your belongings, such as handbags and study materials. Some centers do not have secure storage space available, so please plan accordingly.

Test centers assume no responsibility for your personal items.

If you have health-related needs requiring you to bring equipment, beverages or snacks into the testing room or to take extra or extended breaks, you need to request accommodations in advance. Procedures for requesting accommodations are described in the [Bulletin Supplement for Test Takers with Disabilities or Health-related Needs \(PDF\)](#).

Note: All cell phones, smart phones (e.g., Android® devices, iPhones®, etc.), and other electronic, photographic, recording, or listening devices are strictly prohibited from the test center. If you are seen with such a device, you will be dismissed from the test, your test scores will be canceled, and you will forfeit your test fees. If you are seen *using* such a device, the device will be confiscated and inspected. For more information on what you can bring to the test center, visit www.ets.org/praxis/test_day/bring.

Are You Ready?

Complete this checklist to determine whether you are ready to take your test.

- Do you know the testing requirements for the license or certification you are seeking in the state(s) where you plan to teach?
- Have you followed all of the test registration procedures?
- Do you know the topics that will be covered in each test you plan to take?
- Have you reviewed any textbooks, class notes, and course readings that relate to the topics covered?
- Do you know how long the test will take and the number of questions it contains?
- Have you considered how you will pace your work?
- Are you familiar with the types of questions for your test?
- Are you familiar with the recommended test-taking strategies?
- Have you practiced by working through the practice questions in this study companion or in a study guide or practice test?
- If constructed-response questions are part of your test, do you understand the scoring criteria for these questions?
- If you are repeating a *Praxis* test, have you analyzed your previous score report to determine areas where additional study and test preparation could be useful?

If you answered “yes” to the questions above, your preparation has paid off. Now take the *Praxis* test, do your best, pass it—and begin your teaching career!

10. Understand Your Scores

Understand how tests are scored and how to interpret your test scores

Of course, passing the *Praxis* test is important to you, so you need to understand what your scores mean and what your state requirements are.

What are the score requirements for my state?

States, institutions, and associations that require the tests set their own passing scores. Visit www.ets.org/praxis/states for the most up-to-date information.

If I move to another state, will my new state accept my scores?

The *Praxis* tests are part of a national testing program, meaning that they are required in many states for licensure. The advantage of a national program is that if you move to another state that also requires *Praxis* tests, you can transfer your scores. Each state has specific test requirements and passing scores, which you can find at www.ets.org/praxis/states.

How do I know whether I passed the test?

Your score report will include information on passing scores for the states you identified as recipients of your test results. If you test in a state with automatic score reporting, you will also receive passing score information for that state.

A list of states and their passing scores for each test are available online at www.ets.org/praxis/states.

What your *Praxis* scores mean

You received your score report. Now what does it mean? It's important to interpret your score report correctly and to know what to do if you have questions about your scores.

Visit http://www.ets.org/s/praxis/pdf/sample_score_report.pdf to see a sample score report.

To access *Understanding Your Praxis Scores*, a document that provides additional information on how to read your score report, visit www.ets.org/praxis/scores/understand.

Put your scores in perspective

Your score report indicates:

- Your score and whether you passed
- The range of possible scores
- The raw points available in each content category
- The range of the middle 50 percent of scores on the test

If you have taken the same *Praxis* test or other *Praxis* tests in the last 10 years, your score report also lists the highest score you earned on each test taken.

Content category scores and score interpretation

Questions on the *Praxis* tests are categorized by content. To help you in future study or in preparing to retake the test, your score report shows how many raw points you earned in each content category. Compare your “raw points earned” with the maximum points you could have earned (“raw points available”). The greater the difference, the greater the opportunity to improve your score by further study.

Score scale changes

ETS updates *Praxis* tests on a regular basis to ensure they accurately measure the knowledge and skills that are required for licensure. When tests are updated, the meaning of the score scale may change, so requirements may vary between the new and previous versions. All scores for previous, discontinued tests are valid and reportable for 10 years, provided that your state or licensing agency still accepts them.

These resources may also help you interpret your scores:

- *Understanding Your Praxis Scores* (PDF), found at www.ets.org/praxis/scores/understand
- *The Praxis Passing Scores* (PDF), found at www.ets.org/praxis/scores/understand
- State requirements, found at www.ets.org/praxis/states

Appendix: Other Questions You May Have

Here is some supplemental information that can give you a better understanding of the *Praxis* tests.

What do the *Praxis* tests measure?

The *Praxis* tests measure the specific knowledge and skills that beginning teachers need. The tests do not measure an individual's disposition toward teaching or potential for success, nor do they measure your actual teaching ability. The assessments are designed to be comprehensive and inclusive but are limited to what can be covered in a finite number of questions and question types. Teaching requires many complex skills that are typically measured in other ways, including classroom observation, video recordings, and portfolios.

Ranging from Agriculture to World Languages, there are more than 80 *Praxis* tests, which contain selected-response questions or constructed-response questions, or a combination of both.

Who takes the tests and why?

Some colleges and universities use the *Praxis* Core Academic Skills for Educators tests (Reading, Writing, and Mathematics) to evaluate individuals for entry into teacher education programs. The assessments are generally taken early in your college career. Many states also require Core Academic Skills test scores as part of their teacher licensing process.

Individuals entering the teaching profession take the *Praxis* content and pedagogy tests as part of the teacher licensing and certification process required by many states. In addition, some professional associations and organizations require the *Praxis* Subject Assessments for professional licensing.

Do all states require these tests?

The *Praxis* tests are currently required for teacher licensure in approximately 40 states and United States territories. These tests are also used by several professional licensing agencies and by several hundred colleges and universities. Teacher candidates can test in one state and submit their scores in any other state that requires *Praxis* testing for licensure. You can find details at www.ets.org/praxis/states.

What is licensure/certification?

Licensure in any area—medicine, law, architecture, accounting, cosmetology—is an assurance to the public that the person holding the license possesses sufficient knowledge and skills to perform important occupational activities safely and effectively. In the case of teacher licensing, a license tells the public that the individual has met predefined competency standards for beginning teaching practice.

Because a license makes such a serious claim about its holder, licensure tests are usually quite demanding. In some fields, licensure tests have more than one part and last for more than one day. Candidates for licensure in all fields plan intensive study as part of their professional preparation. Some join study groups, others study alone. But preparing to take a licensure test is, in all cases, a professional activity. Because a licensure exam surveys a broad body of knowledge, preparing for a licensure exam takes planning, discipline, and sustained effort.

Why does my state require the *Praxis* tests?

Your state chose the *Praxis* tests because they assess the breadth and depth of content—called the “domain”—that your state wants its teachers to possess before they begin to teach. The level of content knowledge, reflected in the passing score, is based on recommendations of panels of teachers and teacher educators in

each subject area. The state licensing agency and, in some states, the state legislature ratify the passing scores that have been recommended by panels of teachers.

How were the tests developed?

ETS consulted with practicing teachers and teacher educators around the country during every step of the *Praxis* test development process. First, ETS asked them what knowledge and skills a beginning teacher needs to be effective. Their responses were then ranked in order of importance and reviewed by hundreds of teachers.

After the results were analyzed and consensus was reached, guidelines, or specifications, for the selected-response and constructed-response tests were developed by teachers and teacher educators. Following these guidelines, teachers and professional test developers created test questions that met content requirements and [ETS Standards for Quality and Fairness](#).*

When your state adopted the research-based *Praxis* tests, local panels of teachers and teacher educators evaluated each question for its relevance to beginning teachers in your state. During this “validity study,” the panel also provided a passing-score recommendation based on how many of the test questions a beginning teacher in your state would be able to answer correctly. Your state’s licensing agency determined the final passing-score requirement.

ETS follows well-established industry procedures and standards designed to ensure that the tests measure what they are intended to measure. When you pass the *Praxis* tests your state requires, you are proving that you have the knowledge and skills you need to begin your teaching career.

How are the tests updated to ensure the content remains current?

Praxis tests are reviewed regularly. During the first phase of review, ETS conducts an analysis of relevant state and association standards and of the current test content. State licensure titles and the results of relevant job analyses are also considered. Revised test questions are then produced following the standard test development methodology. National advisory committees may also be convened to review and revise existing test specifications and to evaluate test forms for alignment with the specifications.

How long will it take to receive my scores?

Scores for tests that do not include constructed-response questions are available on screen immediately after the test. Scores for tests that contain constructed-response questions or essays aren’t available immediately after the test because of the scoring process involved. Official score reports are available to you and your designated score recipients approximately two to three weeks after the test date for tests delivered continuously, or two to three weeks after the testing window closes for other tests. See the test dates and deadlines calendar at www.ets.org/praxis/register/centers_dates for exact score reporting dates.

Can I access my scores on the web?

All test takers can access their test scores via My *Praxis* Account free of charge for one year from the posting date. This online access replaces the mailing of a paper score report.

The process is easy—simply log into My *Praxis* Account at www.ets.org/praxis and click on your score report. If you do not already have a *Praxis* account, you must create one to view your scores.

Note: You must create a *Praxis* account to access your scores, even if you registered by mail or phone.

*[ETS Standards for Quality and Fairness](#) (2014, Princeton, N.J.) are consistent with the [Standards for Educational and Psychological Testing](#), industry standards issued jointly by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education (2014, Washington, D.C.).

Your teaching career is worth preparing for, so start today!
Let the *Praxis*® *Study Companion* guide you.

To search for the *Praxis* test prep resources
that meet your specific needs, visit:

www.ets.org/praxis/testprep

To purchase official test prep made by the creators
of the *Praxis* tests, visit the ETS Store:

www.ets.org/praxis/store

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