ETS PRAXIS

Measuring the Power of Learning.®

The *Praxis*® Study Companion

Fundamental Subjects: Content Knowledge

5511

www.ets.org/praxis

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 48).

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.

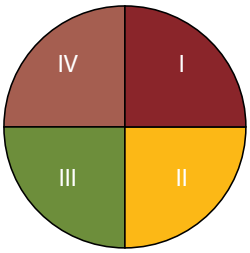
Table of Contents

The Praxis® Study Companion guides you through the steps to success

1. Learn About Your Test

Learn about the specific test you will be taking

Fundamental Subjects: Content Knowledge (5511)

Test at a Glance			
Test Name	Fundamental Subjects: Content Knowledge		
Test Code	5511		
Time	2 hours		
Number of Questions	120		
Format	Selected-response questions; on-screen scientific calculator provided		
Test Delivery	Computer delivered		
	**Content Categories**	**Approximate Number of Questions**	**Approximate Percentage of Examination**
	I. English Language Arts	30	25%
	II. Mathematics	30	25%
	III. Citizenship and Social Science	30	25%
	IV. Science	30	25%

About This Test

The Fundamental Subjects: Content Knowledge test assesses test takers' skills and understanding broadly across four subjects:

- English Language Arts
- Mathematics
- Citizenship and Social Science
- Science

Test takers may answer the questions in any order they choose.

The test content is not predicated on the assumption that test takers should be experts in all of the subjects. The Citizenship and Social Science portion of this test is aligned to the National Council for the Social Studies (NCSS) National Standards for Social Studies Teachers. Since the test's purpose is to assess knowledge and skills in subject matter that may lie outside an individual's teaching specialization, the questions in each subject focus on key indicators of general knowledge and understanding, requiring test takers to utilize fundamental skills that are founded upon broad concepts in each of the subjects.

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

Test Specifications

Test specifications 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. English Language Arts

The English Language Arts section of the Fundamental Subjects: Content Knowledge test is designed to assess basic understanding in the field of English Language Arts. The questions allow test takers to demonstrate their knowledge and understanding of a variety of texts, including fiction, poetry, speeches, essays, and other nonfiction. Some questions will assess test takers' basic understanding of literary passages and the effects created by literary devices in those passages. Other questions will assess test takers' basic reading comprehension skills and knowledge of key elements in writing and speaking. While test takers may encounter basic terms such as "theme" or "character," the English Language Arts section will not assess knowledge of more specialized vocabulary terms such as "metaphor" or "personification."

A. Reading Literature

1. Literal and basic nonliteral meanings of literary selections
2. Major themes and purposes
3. Relationships among particular elements in a selection and relationships between particular elements and the selection as a whole
4. Historical, cultural, and cross-cultural contexts
5. Comparisons between literary texts

B. Literary Methods and Effects; Meanings and effects created by specific literary elements, including

1. Point of view
2. Character
3. Setting, tone, and mood
4. Imagery and figurative language (e.g., metaphor, simile, personification*)

**Technical terms (e.g., metaphor, simile, personification) that appear in questions in the test will be accompanied by definitions.*

C. Reading and Communication Skills

1. Identification of the main idea and supporting ideas in a text
2. Summaries and/or paraphrases of text
3. How language is used and the meanings of words as they are used in context
4. How a selection is organized
5. Fact versus opinion and reasoned judgment
6. Inferences and conclusions
7. Purposes for writing
8. How language is adjusted to communicate with different audiences
9. Decisions about the writing process, including identifying appropriate revision strategies for a given text

II. Mathematics

Since the focus of the Mathematics section of the Fundamental Subjects examination is on testing the mathematical competencies needed in teaching and everyday life, each question is presented in one of the following meaningful real-world contexts:

- School/classroom or work settings, such as calculating grades, interpreting a class or office survey, budgeting for a field trip or project
- Personal settings, such as balancing a checkbook, determining the amount or cost of floor covering for a room, the cost of purchases with taxes and/or shipping costs, and appropriate gratuities
- Interdisciplinary settings, such as interpreting census and/or meteorological data

The test questions do not require knowledge of advanced-level mathematics vocabulary. An on-screen scientific calculator is provided for test takers for this test.

The National Council of Teachers of Mathematics' Principles and Standards for School Mathematics were referred to when developing this section, and the following are covered:

A. Number Sense and Basic Algebra

1. Compute using rational numbers
2. Use estimating skills to solve a problem
3. Use percents to solve a problem
4. Set up ratios and simplify to solve a problem
5. Set up and solve proportions
6. Solve a word problem
7. Express a word problem in algebraic form
8. Represent and use numbers in equivalent forms, including graphs in the *xy*-plane
9. Apply place-value concepts and numeration to ordering and grouping

B. Geometry and Measurement

1. Convert, select, and use measurements within the same system
2. Use scale measurements to interpret maps, drawings, or models
3. Use concepts of area, perimeter, circumference, and volume to solve a problem
4. Solve a problem involving rates

C. Data Analysis and Probability

1. Interpret data based on charts, graphs, tables, and spreadsheets
2. Find trends and patterns and make inferences using graphs or data
3. Determine mean, median, mode, and range using sets of data
4. Compare, calculate, and use probability in a variety of problems

III. Citizenship and Social Science

The questions in this section of the test will assess test takers' knowledge, understanding, and ability to use the major concepts and modes of inquiry from the social sciences, with an emphasis on the ability to make connections and comparisons among major historical events and ideas, especially those that have connections to contemporary events and problems. Test questions from the following four thematic areas also address the test takers' ability to make informed decisions as citizens of a culturally diverse democratic society and interdependent world.

A. Historical Continuity and Change

1. Demonstrate the ability to use chronological thinking skills and to use and analyze historical data (e.g., timelines, maps, graphs, and tables)
2. Distinguish between fact and opinion with respect to primary and other historical documents (e.g., U.S. Declaration of Independence, U.S. Constitution, essays, speeches)
3. Demonstrate understanding of multiple points of view with respect to primary and other historical documents (e.g., essays, famous speeches, interview transcripts, personal narratives)
4. Demonstrate understanding of the significance of historical artifacts, oral traditions, and historical places (e.g., religious holy sites, ancient cities)
5. Identify and demonstrate understanding of the impact of individuals, groups, religions, social organizations, and movements on history (e.g., Susan B. Anthony, Abraham Lincoln, Mohammed, Mahatma Ghandi, Eleanor Roosevelt, imperialism, worldwide immigration and cultural diffusion, the Industrial Revolution, women's and Civil Rights movements, post–Second World War technological advances)
6. Identify and demonstrate understanding of the causes, results, and consequences of social, political, economic, and military events (e.g., the U.S. Revolutionary War and Civil War, independence struggles, the slave trade, U.S. westward expansion, the First and Second World Wars, industrialization, and immigration)

B. People, Places, and Geographic Regions

1. Demonstrate understanding of the interaction between people and places, especially the impact of human activity on the physical environment, the environment's impact on people's lives and culture, and human adaptation to the environment
2. Demonstrate the ability to use basic geographic literacy skills (e.g., geographic tools: maps, graphs, charts)

C. Civics and Government

1. Demonstrate an understanding of major systems of government and how they function, including the major features of the U.S. political system
2. Demonstrate an understanding of rights and responsibilities of U.S. citizens (e.g., voting, taxation, civic participation)

D. Scarcity and Economic Choice

1. Demonstrate an understanding of the economic factors and principles that affect individuals, institutions, nations, and events, and how economic factors interact with other factors, such as geographic features and cultural values

IV. Science

The Science section of the test focuses on assessing the candidate's general background knowledge and understanding of the fundamental facts, basic concepts, principles, processes, methods, and skills that are common to the various scientific disciplines. The development of the science test questions reflect the National Science Education Standards (NSES) and the National Science Teacher Association (NSTA) standards.

It is important for teachers to have a basic understanding of:

A. Nature and History of Science

1. Understand common methods and tools used gather data, such as using thermometers and microscopes, and is familiar with common units of measurement, such as temperature scales, mass, distance, volume, pressure, and energy
2. Identify and use the elements of scientific inquiry for problem solving, including observations, hypotheses, theories, experimental design, and sources of error
3. Recognize important scientific developments and contributions made by major historical figures
4. Interpret and draw conclusions from scientific data, including those presented in tables, graphs, maps, and charts

B. Basic Principles and Fundamentals of Science

1. Understand basic concepts of physics, including forces and motion, speed and acceleration, gravity, mass and weight, static electricity, magnetism, and properties of light, color, and sound
2. Understand energy relationships and transformations in both living and nonliving contexts, including conservation of energy; kinetic and potential energy; heat transfer by conduction, convection, and radiation; properties of solids, liquids, and gases; and changes of state such as melting and evaporation

Understand basic concepts of chemistry, including atomic structure, elements, compounds, mixtures, physical properties, common chemical reactions, pH and acid-base properties, and solubility of common substances

Understand basic biological concepts, including cell structure and processes; photosynthesis; biological molecules such as DNA, proteins, and carbohydrates; simple genetics, general characteristics of common organisms; basic structure and functions of the human body; and processes by which species change over time including evolution

3. Understand basic concepts of ecology, including ecosystems, food chains, population changes, and relationships between species such as predator-prey
4. Understand basic concepts in earth and space science including rocks; plate tectonics; volcanoes; earthquakes; the water cycle; weathering; erosion; geologic history; ocean tides; weather and the atmosphere; climate; and astronomy, including the characteristics of the solar system, stars, galaxies, and other features of the universe

C. Science, Technology, and Social Perspectives

1. Demonstrate understanding of the impact of science and technology on the environment and human affairs, including enhanced greenhouse effect, waste disposal, and air and water pollution
2. Be aware of the impact of science on public health issues, such as nutrition, disease, and medical technologies
3. Understand the role of science and technology in the management of natural resources and the production of energy, including renewable and nonrenewable resources, conservation, recycling, alternative energy sources, and the advantages and disadvantages of various types of energy production

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.

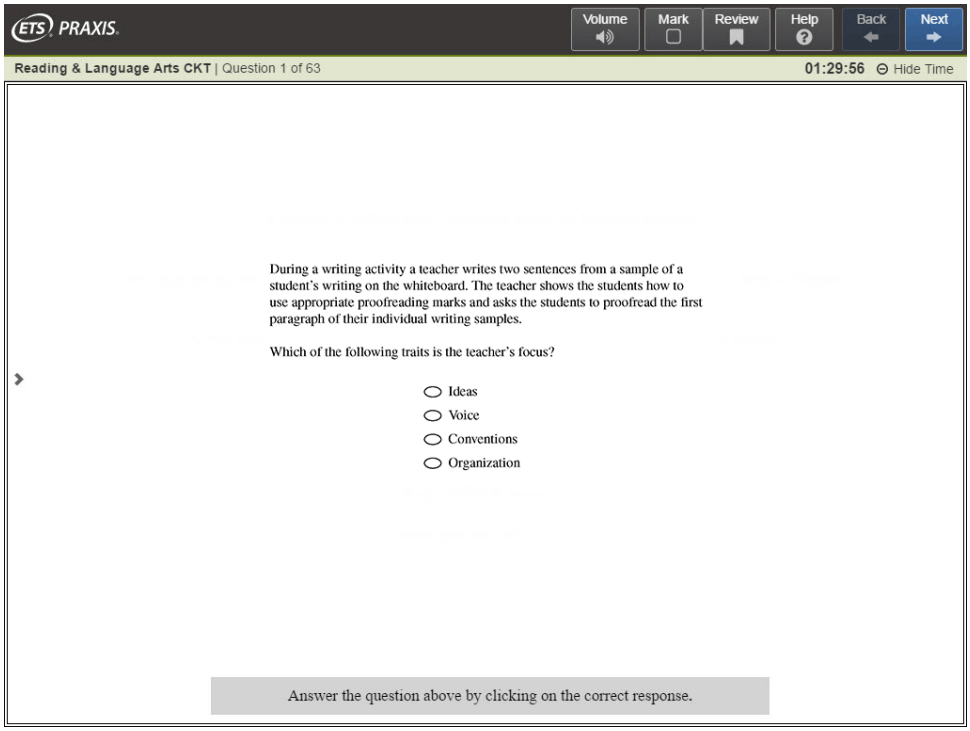
For tests that have constructed-response questions, more detailed information can be found on page 5.

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 the 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 provided as they would appear in a paper-delivered test.



English Language Arts

1. The following is an Iroquois poem entitled "Darkness Song."

We wait in the darkness!
Come, all ye who listen,
Help in our night journey:
Now no sun is shining;
Now no star is glowing;
Come show us the pathway:
The night is not friendly;
She closes her eyelids;
The moon has forgot us,
We wait in the darkness!

Line
5
10

In the context of the poem, the phrase "She closes her eyelids" (line 8) most likely refers to the

(A) refusal of the speaker's companion to keep walking

(B) twinkling of the stars in the night sky

(C) darkness of the night sky

(D) setting of the sun behind the forest

Questions 2–4 refer to the following student draft.

A seventh-grade class is learning how to respond to literary analysis prompts. The following is a student response to the prompt "Describe the significance of the White Rabbit in *Alice's Adventures in Wonderland*, by Lewis Carroll."

(1) The White Rabbit represents an adult who worries about schedules; he says, "Oh my ears and whiskers, how late it's getting!"
(2) Alice wanders after the rabbit down the hole because, unknown to her, she wishes to not be a child anymore, she wants to be an adult.
(3) When she follows the rabbit down the hole, she makes the choice to transform into an adult and leave her childish ways behind.
(4) She begins her journey to Wonderland confused about all of her choices.
(5) The author uses The White Rabbit as a metaphor to contrast with the childish ways Alice is leaving behind.
(6) Her choices are like the choices she will have to make as she gets older.

2. Which of the following revisions will best improve the clarity of the response?

(A) Switch sentence 1 and sentence 5

(B) Switch sentence 2 and sentence 3

(C) Switch sentence 4 and sentence 6

(D) Switch sentence 5 and sentence 6

3. In sentence 1, which of the following words or phrases, inserted before "he says," provides the best transition between the first clause and the quotation?

(A) similarly,

(B) for instance,

(C) first of all,

(D) namely,

4. Which of the following errors is present in sentence 2 ?

(A) Comma splice

(B) Faulty parallelism

(C) Incorrect subject-verb agreement

(D) Inconsistent verb tense

5. The following passage is from "Sonny's Blues" by James Baldwin.

   These boys . . . were growing up with a rush and their heads bumped abruptly against the low ceiling of their actual possibilities. They were filled with rage. All they really knew were two darknesses, the darkness of their lives, which was now closing in on them, and the darkness of the movies, which had blinded them to that other darkness, and in which they now, vindictively, dreamed, at once more together than they were at any other time, and more alone.

   The author uses images of a "low ceiling" and "darkness" in order to portray life experiences that are

   (A) limitless
   (B) empty
   (C) restricted
   (D) fulfilling

6. The following excerpt is from a speech by William Safire.

   Is the decline of the written word inevitable? Will the historians of the future deal merely in oral history? I hope not. I hope that oral history will limit itself to the discovery of toothpaste and the invention of mouthwash. I don't want to witness the decomposing of the art of composition, or be present when we get in touch with our feelings and lose contact with our minds.

   It can be inferred from the passage that the author believes that, in contrast to oral history, the written word is

   (A) able to convey emotions more accurately
   (B) a more intellectual exercise
   (C) doomed to describe mundane historical events
   (D) already obsolete

7. An article describes a method of writing instruction in which "children are in different stages of the writing process, working on self-selected topics. Simultaneously, teachers are meeting with individual or small groups of students to confer and help move them along with their writing. Other components include peer conferences and/or response groups." The article best describes which of the following teaching models?

   (A) Writer's workshop
   (B) Direct instruction
   (C) Literature circles
   (D) Shared writing

8. 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

Mathematics

RECORD LOW TEMPERATURES AT TANNERSVILLE, PA	
Month	Record Low (degrees Fahrenheit)
January	– 31
February	– 25
March	– 14
April	11
May	22
June	31
July	39
August	32
September	22
October	12
November	– 6
December	– 19

9. The monthly record low temperatures, in degrees Fahrenheit, for Tannersville, Pennsylvania, are given in the table above. What is the range of the record low temperatures for Tannersville? (The range is the difference between the highest and the lowest number in a set of values.)

   (A) 8

   (B) 12

   (C) 62

   (D) 70

10. Carla bought a new automobile for $20,000 and made a down payment of 40 percent of the purchase price. If she paid off the rest of the price in equal monthly installments for 4 years, with no interest charges, what was the amount of each monthly installment?

    (A) $167

    (B) $225

    (C) $250

    (D) $583

11. A mathematics game uses a bag of tiles. Each tile has either a single digit or a single basic operation on it: $+$, $-$, $\times$, or $\div$. Each of the 10 digits appears on 5 different tiles, and each of the 4 basic operations appears on 6 different tiles for a total of 74 tiles. If two tiles are selected at random without replacement, what is the probability that both tiles selected will have operations on them?

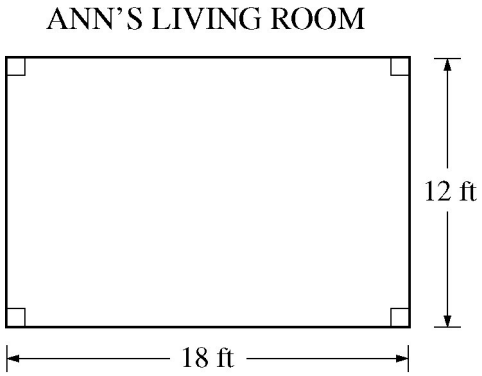
    (A) $\left(\frac{4}{24}\right)\left(\frac{3}{23}\right)$

    (B) $\left(\frac{4}{24}\right)^2$

    (C) $\left(\frac{24}{74}\right)\left(\frac{23}{73}\right)$

    (D) $\left(\frac{24}{74}\right)^2$

Question 12 refers to the following diagram.



12. Ann plans to place a continuous wallpaper border on the walls of her living room, whose blueprint is shown above. Each roll cost $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

13. *To make 36 five-inch pancakes, mix 4-1/2 cups of water with two pounds of pancake mix.*

    When Mark goes shopping at the Food Warehouse, he often buys food in large quantities in order to save money. A problem that sometimes arises is that large packages give directions for making food for large groups. Last week he brought home pancake mix with the directions shown above. If Mark wants to make 10 five-inch pancakes, how many cups of water should he use?

    (A) $4\frac{1}{20}$ cups

    (B) $1\frac{3}{4}$ cups

    (C) $1\frac{1}{2}$ cups

    (D) $1\frac{1}{4}$ cups

Citizenship and Social Sciences

Question 14 refers to the following quote.

New York newspaperman John L. O'Sullivan is credited with coining the term Manifest Destiny, ". . . the fulfillment of our manifest destiny to overspread the continent allotted by Providence for the free development of our yearly multiplying millions. . . "

14. The idea of Manifest Destiny was used in the United States primarily to justify which of the following?

    (A) The emancipation of slaves

    (B) The expansion of slavery in the Western states

    (C) The creation of trade barriers

    (D) The acquisition of Indian, Mexican, and Canadian lands

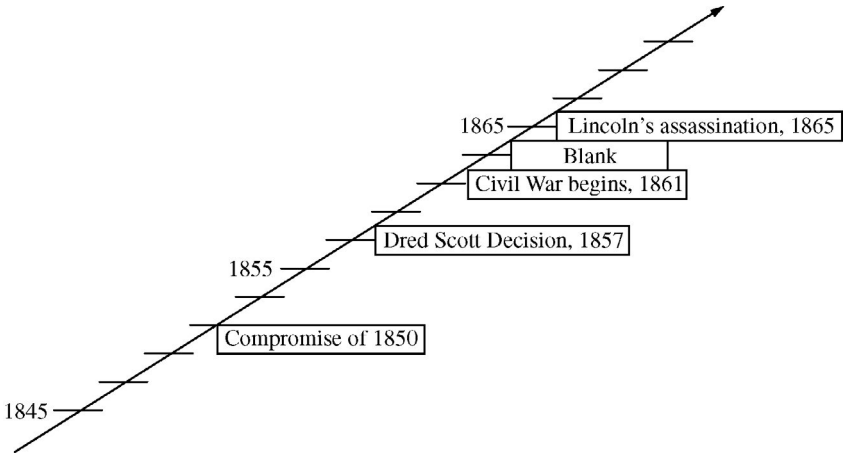
15. According to the United States Constitution, the President is given the power to do which of the following?

    (A) Impeach judges

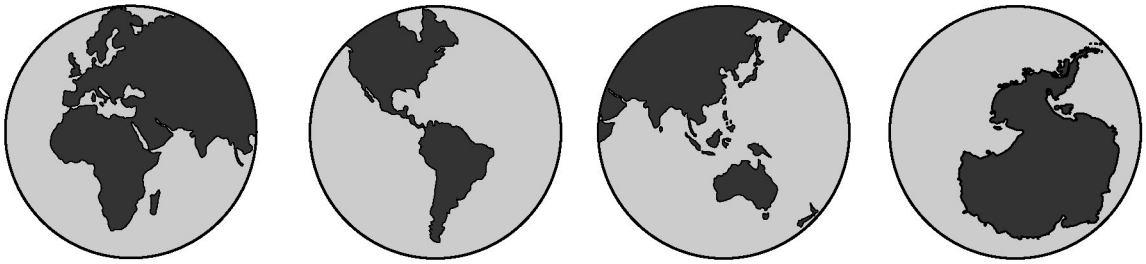
    (B) Pass laws

    (C) Coin money

    (D) Veto bills

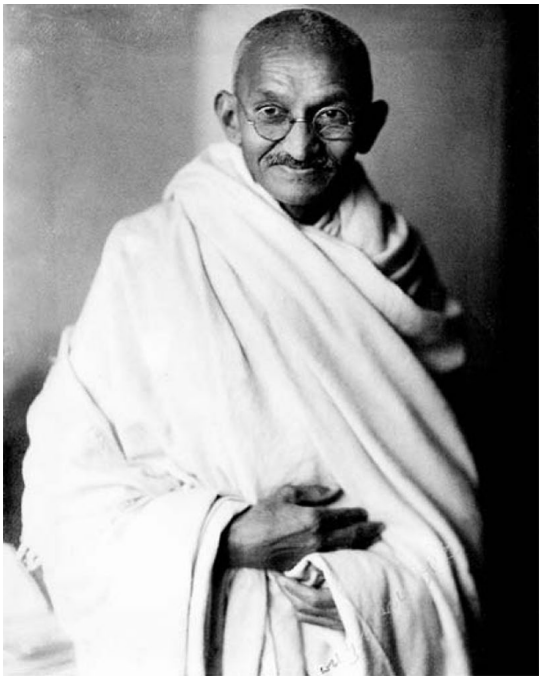


16. Which event could be inserted into the blank space on the timeline above?
    (A) California gold rush
    (B) Grant becomes President
    (C) Emancipation Proclamation
    (D) The South surrenders at Appomattox



17. Egypt is located in which of the regions shown in the maps above?
    (A) Map 1
    (B) Map 2
    (C) Map 3
    (D) Map 4

18. Which of the following is an effect of inflation?
    (A) Consumer buying power decreases
    (B) Consumer buying power increases
    (C) Interest rates generally decline
    (D) Exports increase



19. Which of the following is true for both Martin Luther King, Jr. and Mahatma Gandhi, shown above?
    (A) They based their movements for social change on Christian faith
    (B) They led mass movements based on nonviolent civil disobedience
    (C) They believed in achieving their goals by any means necessary
    (D) They urged their followers to cooperate with the rules laid down by established authorities

Science

20. Of the following gases, which represents the largest percentage of the annual human-caused input of greenhouse gases?
    (A) Helium
    (B) Nitrogen
    (C) Radon
    (D) Carbon dioxide

21. Which of the following food chains would provide a human with the largest percentage of the energy that was captured and stored by the primary producer?
    (A) Reed → insect → frog → fish → human
    (B) Plankton → shrimp → tuna → human
    (C) Grass → cow → human
    (D) Corn → human

22. Which of the following is true about the planets in our solar system?
    (A) They all have moons.
    (B) They all have rocky surfaces.
    (C) They reflect light from the Sun.
    (D) They are larger than most stars.

23. Which of the following is a voltage source?
    (A) Battery
    (B) Switch
    (C) Lamp
    (D) Conducting wire

24. Which of the following could be the pH of an acid in water at room temperature?
    (A) pH = 5.0
    (B) pH = 7.0
    (C) pH = 9.0
    (D) pH = 14.0

25. Of the following scientific disciplines, which is most directly concerned with weather?
    (A) Physiology
    (B) Paleontology
    (C) Ornithology
    (D) Meteorology

26. Which THREE of the following are parts of the scientific method?
    (A) Collecting facts and data
    (B) Formulating a hypothesis
    (C) Testing a hypothesis
    (D) Eliminating data that do not support a theory

27. A bird species that was introduced into the United States from Europe in the 1800s has spread throughout the country and now is considered an invasive species. Of the following factors, which THREE have most likely contributed to the success of the invasive species in the United States?
    (A) Adequate nesting sites
    (B) A suitable range of temperatures
    (C) An abundance of natural predators
    (D) An availability of appropriate food sources

Answers to Sample Questions

English Language Arts

1. The correct answer is (C). The statement "She closes her eyelids" refers back to the night mentioned in line 7. Since there is no light from the Sun or the stars (lines 4–5), the sky is dark and the night can be said to have closed its eyelids, or blocked out the light. (A) is incorrect because line 8 refers to the night, not the speaker's companion. (B) is incorrect because line 5 explains that there are no stars in the night sky. (D) is incorrect because the speaker describes being surrounded by darkness, which indicates that the Sun has already set.

2. The correct answer is (D). Sentence 6 is most appropriate after sentence 4 because it clarifies why Alice is confused about the choices she must make in Wonderland. Sentence 5 is an appropriate conclusion because it ties back to the thesis stated in sentence 1. (A) is incorrect because sentence 1 is most appropriate as the opening of the paragraph; it introduces the main idea of the response. Also, the quotation contained within sentence 1 would not make sense if placed in sentence 5's current position. (B) is incorrect because these sentences contain similar information. Switching their placement would not contribute to overall clarity. (C) is incorrect because the fact that Alice is making choices in Wonderland must be introduced, as it is in sentence 4, before the nature of the choices can be discussed in more detail, as it is in sentence 6.

3. The correct answer is (B). "For instance" signals that the quotation illustrates the kind of worry described in the first clause. (A) is incorrect because it suggests that the quotation describes a similar but distinct behavior of the rabbit's. (C) is incorrect because it suggests that the quotation is the beginning of a sequence, but there are no additional items in the sequence. (D) is incorrect because "namely" is typically used to restate an idea in more specific terms, not to provide an illustration of it.

4. The correct answer is (A). The comma between "anymore" and "she wants" is a comma splice; it is used incorrectly to separate two independent clauses. (B) and (C) are incorrect because there are no examples of faulty parallelism or incorrect subject-verb agreement in sentence 2. (D) is incorrect because all of the verbs used in sentence 2 are in the present tense.

5. The correct answer is (C). The boys bump against the "low ceiling of their actual possibilities," suggesting that the actual possibilities in the boys' lives have been restricted. Similarly, "the darkness of their lives" is "closing in on them," or beginning to restrict the boys' experiences and possibilities. (A) and (D) are incorrect because the imagery suggests that the boys' life experiences have been negative rather than positive. (B) is incorrect because the author explains that the boys know only "two darknesses," suggesting that their lives are restricted in scope but are not empty.

6. The correct answer is (B). In the final sentence of the passage, Safire suggests that if we stop engaging with the written word ("the art of composition"), we may also "lose contact with our minds," or miss out on the intellectual rewards of the written word. (A) is incorrect because the final sentence of the passage suggests that written composition is an intellectual exercise rather than an emotional one. (C) is incorrect because the author expresses the belief that oral, not written, history should "limit itself to" describing mundane events, such as the invention of mouthwash. (D) is incorrect because although the author considers the possibility that the written word may decline in the future, he does not suggest that it is already obsolete.

7. The correct answer is (A). In the Writer's Workshop model, student writers progress at different rates, and their work is supported by the feedback they receive in both teacher conferences and peer support groups. (B) is incorrect because direct instruction is teacher led and primarily uses whole-class lectures and demonstrations. (C) is incorrect because literature circles focus primarily on reading comprehension and discussion, and not as much on writing. (D) is incorrect because in shared writing, the teacher and student compose text together instead of the student writing independently with guidance from the teacher.

8. 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.

Mathematics

9. This question requires you to apply the given definition of range. According to the table, the lowest record low temperature, in degrees Fahrenheit, is -31 and the highest record low temperature is 39. Using the definition given, subtract -31 from 39:

$$39 - (-31) = 70$$

Thus, the range is 70 degrees. The correct answer is (D).

10. Carla bought the new automobile for $20,000 and made a down payment of 40 percent of the purchase price. Thus the down payment was $\frac{40}{100}(\$20{,}000) = \$8{,}000$, and she owes $\$20{,}000 - \$8{,}000 = \$12{,}000$. She will pay off the $\$12{,}000$ in monthly installments for 4 years, and there will be $(4)(12) = 48$ payments. To determine the amount of each monthly installment, use the following calculation: $\frac{\$12{,}000}{(4)(12)} = \frac{\$1{,}000}{4} = \$250$. The correct answer is (C).

11. In order to calculate the theoretical probability of an event *E*, find the total number of outcomes and the number of favorable outcomes. Then the probability of event *E* is given by

$$P(E) = \frac{\text{The number of favorable outcomes}}{\text{The total number of outcomes}}.$$

In this scenario, a favorable outcome is when a tile that has an operation on it is drawn from the bag. The total number of outcomes is the total number of tiles in the bag.

Each of the 10 digits appears on 5 different tiles, so there are $(10)(5) = 50$ tiles in the bag that have digits on them. Each of the 4 basic operations appears on 6 different tiles. Thus there are $(4)(6) = 24$ tiles with operations on them, and the total number of tiles is $50 + 24 = 74$.

We are to select two tiles at random, without replacement, from the bag. When the first tile is selected at random from the bag, the probability that tile with an operation on it will be selected is $\frac{\text{The number of tiles with operations}}{\text{The total number of tiles}} = \frac{24}{74}$. The second selection is done without replacing the first tile that was selected, so there are a total of 73 tiles remaining in the bag. If a tile with an operation on it was selected the first time, there will be 23 tiles remaining in the bag with operations on them, and the probability of selecting a tile with an operation on it during the second selection will be $\frac{23}{73}$. Since the two selections are independent events, the probability that both events will occur is the product of the individual probabilities. That is, the probability that the first selection will be a tile with an operation on it AND that the second selection will also be a tile with an operation on it is the product $\left(\frac{24}{74}\right)\left(\frac{23}{73}\right)$. The correct answer is (C).

12. The minimum length of wallpaper border needed to decorate the room is equal to the perimeter of Ann's living room. Since the perimeter is the sum of the lengths of the four sides of the room, the perimeter can be written: $18\ ft + 18\ ft + 12\ ft + 12\ ft$ and is equal to 60 feet.

The number of rolls of border needed is determined by dividing the perimeter by the length of each roll of border.

$$\frac{60\text{ft}}{8\text{ft}} = 7\frac{1}{2} \text{ rolls}$$

Since Ann needs a minimum of 7-1/2 rolls and 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.

$$\$6.47 \times 8 = \$51.76$$

The correct answer is (B).

13. According to the recipe, 36 five-inch pancakes require $4\frac{1}{2}$ cups of water. The proportion of the number of pancakes to the number of cups of water is:

$$\frac{\text{Number of five-inch pancakes}}{\text{Number of cups of water}} = \frac{36}{4\frac{1}{2}} = \frac{36}{\frac{9}{2}} = \frac{72}{9} = \frac{8}{1}$$

Since Mark is using the same recipe to make 10 five-inch pancakes, the proportion of the number of pancakes to the number of cups of water is still:

$$\frac{\text{Number of five-inch pancakes}}{\text{Number of cups of water}} = \frac{8}{1}$$

The number of cups of water needed to make 10 five-inch pancakes is:

$$\frac{\text{No. of five-inch pancakes}}{\text{No. of cups of water}} = \frac{8}{1} = \frac{10}{\text{No. of cups of water}}$$

By cross multiplying, $\frac{8}{1} = \frac{10}{\text{Number of cups of water}}$ can be written as: $\text{Number of cups of water} = \frac{10}{8}$, which is equal to $1\frac{1}{4}$ cups of water. The correct answer is (D).

Citizenship and Social Science

14. The correct answer is (D). The idea of "Manifest Destiny" proposed that the United States had a right to spread its civilization across the continent. Though economic gain motivated much of the westward expansion in the 1800s, the notion of a Manifest Destiny provided an ideological basis for conquering and/or acquiring Native American, Mexican, and Canadian lands in North America.

15. The correct answer is (D). Article II of the United States Constitution spells out the powers of the President. Among them is the power to reject, or veto, a law that is passed by the Congress. Only the House of Representatives has the power to impeach a federal official or a judge (A). Passing laws (B) is the duty of the Congress and coining money (C) is a power reserved to the Congress.

16. The correct answer is (C). Abraham Lincoln issued the Emancipation Proclamation in 1863. The Civil War had already begun. Grant did not become president (B) until after the war, and the South surrendered (D) in the same year that Lincoln was assassinated. The height of the California gold rush (A) took place between 1849 and 1852.

17. The correct answer is (A). Egypt is in the northeastern part of the continent of Africa, which is pictured in Map 1. Map 2 depicts South America and most of North America. Map 3 depicts Central and East Asia as well as Australia. Map 4 shows the continent of Antarctica.

18. The correct answer is (A). Inflation is an economic condition characterized by a general rise in prices throughout an economy. In periods of high inflation, the same amount of money buys far fewer goods, therefore consumer buying power, in general, decreases.

19. The correct answer is (B). Both Gandhi and Martin Luther King, Jr. led movements for social change based on principles of nonviolence. King was a Christian minister, but Gandhi did not base his movement on Christian faith (A). "By any means necessary" (C) is a phrase often associated with Malcolm X, another civil rights leader in the United States in the 1960s. (D) is incorrect: Both King and Gandhi urged their followers to conduct nonviolent acts of civil disobedience when faced with unjust laws or policies.

Science

20. The correct answer is (D). Although there are several gases, such as methane, water vapor, and nitrous oxide, that are greenhouse gases, carbon dioxide accounts for the largest percentage of the annual human-caused input of greenhouse gases. Helium, nitrogen, and radon are not greenhouse gases.

21. The correct answer is (D). The primary producer in each of the food chains listed is the photosynthetic organism at the beginning of the food chain. These organisms are responsible for capturing light energy and converting it into the chemical energy that ultimately supports the rest of the food chain. Much of the energy an organism acquires is used to maintain its own life processes, and only a small portion is actually stored. This is true at each level of the food chain, and therefore, the largest percentage of the original energy captured by the producer would be available to the human in the shortest food chain.

22. The correct answer is (C). All of the planets in our solar system reflect light from the Sun. They are not larger than most stars, not all have moons, and only some have rocky surfaces.

23. The correct answer is (A). A battery is a voltage source. Switches, lamps, and conducting wires are devices that are part of some electrical systems, but they are not sources of voltage.

24. The correct answer is (A). At room temperature, the pH of acidic solutions is less than 7.

25. The correct answer is (D). Meteorology includes atmospheric chemistry and physics, with a major emphasis on weather.

26. The correct answers are (A), (B), and (C). Prior to formulating a hypothesis, facts and data are collected. The hypothesis is tested. Eliminating data that do not support a theory is not part of the scientific method.

27. The correct answers are (A), (B), and (D). Environmental conditions in the United States were appropriate for the reproduction and survival of the invasive species, including adequate nesting locations, a suitable range of temperatures, and availability of appropriate food sources. However, as happens with many invasive species, there were few, if any, natural predators or competitors in their new habitat. This allowed the invasive species to thrive in their new ecosystems and to reduce populations of native species. An abundance of predators would have suppressed an increase in the population of the invasive species and therefore was not a factor that contributed to their success.

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/dates_centers.
- 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 53.

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 13.
- **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 Fundamental Subjects: 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. English Language Arts

The English Language Arts section of the Fundamental Subjects: Content Knowledge test is designed to assess basic understanding in the field of English Language Arts. The questions allow test takers to demonstrate their knowledge and understanding of a variety of texts, including fiction, poetry, speeches, essays, and other nonfiction. Some questions will assess test takers' basic understanding of literary passages and the effects created by literary devices in those passages. Other questions will assess test takers' basic reading comprehension skills and knowledge of key elements in writing and speaking. While test takers may encounter basic terms such as "theme" or "character," the English Language Arts section will not assess knowledge of more specialized vocabulary terms such as "metaphor" or "personification."

A. Reading Literature

1. Literal and basic nonliteral meanings of literary selections
2. Major themes and purposes
3. Relationships among particular elements in a selection and relationships between particular elements and the selection as a whole
4. Historical, cultural, and cross-cultural contexts
5. Comparisons between literary texts

B. Literary Methods and Effects; Meanings and effects created by specific literary elements, including

1. Point of view
2. Character
3. Setting, tone, and mood
4. Imagery and figurative language (e.g., metaphor, simile, personification*)

**Technical terms (e.g., metaphor, simile, personification) that appear in questions in the test will be accompanied by definitions.*

C. Reading and Communication Skills

1. Identification of the main idea and supporting ideas in a text
2. Summaries and/or paraphrases of text
3. How language is used and the meanings of words as they are used in context
4. How a selection is organized
5. Fact versus opinion and reasoned judgment
6. Inferences and conclusions
7. Purposes for writing
8. How language is adjusted to communicate with different audiences
9. Decisions about the writing process, including identifying appropriate revision strategies for a given text

Discussion areas: English Language Arts

The following exercise and annotated sample are intended to give you practice in the kind of interpretive thinking about literature that is expected in the sections of the test described on the previous pages. Although the format of this annotation exercise is not like that of the multiple-choice questions on the test, the skills of interpretation and evaluation needed to complete it are comparable. For this exercise, read the poem and questions and try to annotate the poem in response to the questions.

- Read the following poem, Sara Teasdale's "Leaves." What is the point of view of the poem? What is its tone? What kinds of figurative language does it use?

One by one, like leaves from a tree,
All my faiths have forsaken me;
But the stars above my head
Burn in white and delicate red,
And beneath my feet the earth
Brings the sturdy grass to birth.
I who was content to be
But a silken-singing tree,
But a rustle of delight
In the wistful heart of night,
I have lost the leaves that knew
Touch of rain and weight of dew.
Blinded by a leafy crown
I looked neither up nor down—
But the little leaves that die
Have left me room to see the sky;
Now for the first time I know
Stars above and earth below.

The following exercise and annotated sample are intended to give you practice in the kind of interpretive thinking about literature that is expected in the sections of the test described on the previous page. Although the format of this annotation exercise is not like that of the multiple-choice questions on the test, the skills of interpretation and evaluation needed to complete it are comparable. For this exercise, read the passage and questions and try to annotate the passage in the same way you annotated the E. B. White poem.

- Here is a paragraph from an essay about the novels of Jane Austen. Read it and consider these questions: How does the writer establish the subject? How does he use specific examples to advance his argument? How does he communicate his own opinion about Austen's choice of subject matter?

  Austen's novels are relentlessly concerned with private life, concerned with "three or four families in a country town," as she put it in one famous letter. This is all the more remarkable when we consider the events of her lifetime. Though living through a period that witnessed the birth of an independent United States, the French Revolution, the Napoleonic Wars, and the upheavals of the Industrial Revolution, she focuses on a few middling gentry families in rural England. Touches of the wider world sometimes impinge on Austen's peaceful outposts—Wickham, a soldier, plays a prominent role in Pride and Prejudice; there are passing references to the British colonies and the slave trade in Mansfield Park; and the British navy's preservation of England in the Napoleonic Wars is duly noted in Persuasion. For the most part, though, her characters go about their farming and their business, their follies and especially their romances, their dances and their games of backgammon and whist, as if nothing has changed. Soldiers and sailors, when they appear, are always on leave.

II. Mathematics

Since the focus of the Mathematics section of the Fundamental Subjects examination is on testing the mathematical competencies needed in teaching and everyday life, each question is presented in one of the following meaningful real-world contexts:

- School/classroom or work settings, such as calculating grades, interpreting a class or office survey, budgeting for a field trip or project
- Personal settings, such as balancing a checkbook, determining the amount or cost of floor covering for a room, the cost of purchases with taxes and/or shipping costs, and appropriate gratuities
- Interdisciplinary settings, such as interpreting census and/or meteorological data

The test questions do not require knowledge of advanced-level mathematics vocabulary. An on-screen scientific calculator is provided for test takers for this test.

The National Council of Teachers of Mathematics' Principles and Standards for School Mathematics were referred to when developing this section, and the following are covered:

A. Number Sense and Basic Algebra

1. Compute using rational numbers
2. Use estimating skills to solve a problem
3. Use percents to solve a problem
4. Set up ratios and simplify to solve a problem
5. Set up and solve proportions
6. Solve a word problem
7. Express a word problem in algebraic form
8. Represent and use numbers in equivalent forms
9. Apply place-value concepts and numeration to ordering and grouping

B. Geometry and Measurement

1. Convert, select, and use measurements within the same system
2. Use scale measurements to interpret maps, drawings, or models
3. Use concepts of area, perimeter, circumference, and volume to solve a problem
4. Solve a problem involving rates

C. Data Analysis and Probability

1. Interpret data based on charts, graphs, tables, and spreadsheets
2. Find trends and patterns and make inferences using graphs or data
3. Determine mean, median, mode, and range using sets of data
4. Compare, calculate, and use probability in a variety of problems

Discussion areas: Mathematics

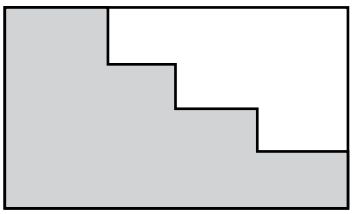
- Suppose that the temperature at a location increased from $-4°F$ to $12°F$. To find the net change in temperature, would you use the computation $12-4=8$? Why or why not?
- How can you tell by inspection whether a fraction (e.g., $\frac{203}{198}$) has a value greater than 1? Whether a fraction such as $\frac{39}{75}$ has a value greater than $\frac{1}{2}$?
- Can the product of two positive numbers be less than either number? How can you divide a decimal by 1,000 without using a calculator or actually doing the division?
- If $\frac{10}{24}$ of an amount is budgeted for rent and $\frac{15}{36}$ of the same amount is budgeted for food, is the amount budgeted for rent different from the amount budgeted for food? How can you decide?
- To estimate the value of $\frac{4}{11}$ of \$3,000, what is a convenient approximation for $\frac{4}{11}$?
- Round 27,653.2175 to various decimal places. If you are rounding an amount of money to the nearest tenth of a cent, which decimal place determines whether you should round up or down?
- If the population of a town increases from 99,843 to 124,982, what would be an appropriate approximation to use for the two population figures to obtain an estimate of the increase?
- If you round the prices of each of 17 drugstore items to the nearest dollar, by how much could the total of your estimates differ from the total of the actual prices? By \$8 ? By \$9 ?
- If a person walks at a rate of 21 steps in 10 seconds, how can you decide by estimation that the person would complete more than 100 steps in 52 seconds?
- To check the placement of the decimal point in the product 2.3×6.98 , what would be an integer estimate of the value of the product?
- What does *percent* mean? What is the difference between 20 and 20% ?
- If the price of a chair was reduced by 20% and the price of a table was reduced by 15%, was the price of the chair reduced by the greater amount?
- What are equivalent ways to represent 48% ? What percents have a value less than 1 ? Greater than 1 ?
- Suppose 24% of the scores in an athletic competition are less than 5.8. What percent would represent all of the scores? How would you find the percent of scores greater than or equal to 5.8 ? Do you need to know the total number of scores? Why or why not?
- Is asking, "What percent of 12 is 9 ?" the same as asking, "What percent of 9 is 12 ?"
- What is meant by "20% decrease"? If a quantity decreases by 20% and then increases by 20%, is the net change 0%? Why or why not?
- Is an increase in weight from 160 pounds to 200 pounds a 20% increase or a 25% increase?
- A newspaper reported that enrollment at School A decreased by 150% and enrollment at School B increased by 200%. Which part of this report could be accurate? Which part inaccurate? Explain.
- Can a ratio have a value greater than 1 ? Is the ratio 3 to 7 the same as the ratio 7 to 3 ?
- The ratio of 4 boys to 5 girls can be expressed by the fraction $\frac{4}{5}$. What are some other ways of expressing this ratio?

- What feature of a ratio allows you to find the simplest equivalent form?
- On a school committee, the ratio of the number of men to the number of women is 8 to 12. What is the ratio expressed in lowest terms? Could there be a total of 10 committee members? 36 ? In each case, why or why not?
- How is the concept of proportion related to the concept of ratio? How do the two concepts differ? How many terms does a proportion have?
- Why is $\frac{2}{3} = \frac{9}{12}$ not a valid proportion? How could you change one of the numbers so that the proportion is true?
- In the proportion $\frac{4}{5} = \frac{n}{12}$, what is the value of $5n$?
- What does it mean to say that an amount of an ingredient in a recipe is *proportional* to the number of servings? Can you think of other situations in which one quantity is proportional to another quantity?
- What does it mean for one quantity to be *inversely proportional* to another quantity? Can you think of quantities that are inversely proportional?
- What does it mean for one quantity to be *directly proportional* to another quantity? If y is directly proportional to x, how it this related to the equation $y = mx + b$?
- What arithmetic operation is indicated by the term "cumulative amount"? By "withdrawal"?
- Prepare a list of mathematical terms and everyday words related to each of the arithmetic operations.
- If Ms. Jones budgets $\frac{1}{4}$ of her monthly income for rent and $\frac{1}{3}$ of the remaining amount for food, what calculation would you need to perform to find the fraction of her monthly income that Ms. Jones budgets for food? Why is the answer *not* $\frac{1}{3}$?
- Suppose Bob has more than $10, spends $8.25, and then gives half of the remaining amount to Tom. Would Bob have the same amount remaining if he had first given half of his money to Tom and then spent $8.25 ?
- Write a problem that you could solve by "working backwards." Be sure to give the end result from which you work.
- How could you use a similar simpler problem together with pattern recognition to find the units digit in the number 2^{400} without actually evaluating this number?
- Is $2n-5$ the same as $2(n-5)$? How could you check?
- What is the difference between an expression and an equation?
- There are n students in Ms. Smith's class. In Mr. Chen's class, there are 5 fewer than twice as many students as in Ms. Smith's class. Write an expression in terms of n for the number of students in Mr. Chen's class.
- Suppose that 2 buses, each with a seating capacity of k people, transport a total of n people. One bus is full and the other bus has 2 empty seats. Do you see that $n = 2k-2$ represents this situation? Can the situation also be represented by $2(k-2)$?
- In the bus problem above, if there are a total of 78 people on the two buses, how can you use the equation $n = 2k-2$ to find the seating capacity of each bus? Could there be a total of 67 people on the two buses instead of 78 ?
- Are $\frac{1}{2}$, 0.5, and $\frac{30}{60}$ equivalent?
- In a fractional equivalent of 12.037, if the numerator is 12,037, what is the denominator?
- How could you use the fact that the fraction $\frac{125}{40}$ represents an arithmetic operation to find a decimal equivalent?
- Can every fraction be expressed as a fraction having some power of 10, such as 100 or 1,000 or 10,000, for its denominator? What are some fractions that you could use to decide?

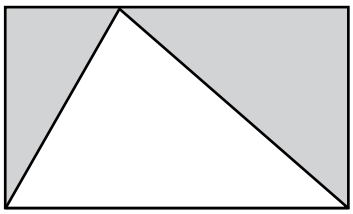
- Of 20 test grades, $\frac{1}{4}$ are A's, 9 are B's, 20% are C's, and the remaining grades are D's. What would be a convenient common form in which to express these quantities in order to decide which grade occurred most frequently?
- How can you tell by inspection that the decimal equivalent of $\frac{14}{27}$ is approximately 0.5 ? If you are changing $\frac{44}{31}$ to a decimal, why must its value be greater than 1 ?
- In the decimal system of numeration, what is the ratio of the value of each digit to the value of the digit immediately to its right?
- In the number 82.537, the place value of the digit 8 is how many times the place value of the digit 7 ?
- How can you use place value to determine which is greater, a water rate of $0.012 per gallon or a water rate of $0.0085 per gallon?
- If you were asked to order the three meter readings 0.2340781, 0.234165, and 0.23419, which digits in each of the readings would it suffice to check to make a determination?
- To find the time, in hours, that has elapsed from 11:45 a.m. to 6:25 p.m. on the same day, could either of the following computations be used to find the answer? Why or why not?

$$\begin{array}{r} 11.45 \\ -\ 6.25 \\ \hline \end{array} \qquad \begin{array}{r} 18\ \frac{5}{12} \\ -\ 11\ \frac{3}{4} \\ \hline \end{array}$$

- What number should you use to change a measurement in feet to an equivalent measurement in yards? What arithmetic operation would be involved? If y feet $= z$ yards, is y less than, equal to, or greater than z ?
- How are metric units related to each other (e.g., a millimeter and a centimeter)?
- What are some situations in which you might have to convert from one unit of measure to a different unit? What is an appropriate nonmetric unit of measure for the dimensions of a book? What is an appropriate metric unit of measure for the dimensions of a large city?
- Beth is paid every 2 weeks and John is paid every month. If the amount of John's paycheck is twice the amount of Beth's, can it be determined which of the two has the greater annual salary? What relationship between different units of measure can help you decide?
- What does it mean to say that the floor plan of a house is drawn to a scale in which 0.1 inch represents 1 foot? How could you use some of the ideas from the previous topic ("Convert, select, and use measurements within the same system") to determine how the dimensions of the house compare with the dimensions from the floor plan?
- On a map of a city, if 5 centimeters represents 2 kilometers, how would you determine the scaling factor to use to find the area of a park in the city?
- In a scale model of a rectangular building, if each linear dimension of the model scales up by a factor of 10, by what factor does the volume of the building scale up? By what factor does the surface area of the building scale up?
- If you wanted to make a scale model of a mountain, which would be a more appropriate geometric solid to use, a cylinder or a cone? Why? How could you determine the distance around the base of the mountain as predicted by your model?
- How does the perimeter of the shaded region below compare with the perimeter of the entire rectangle? Do you need to know any measurements to decide?

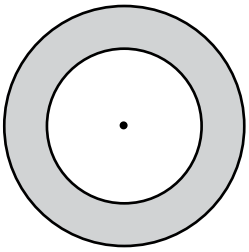


- Why is the sum of the areas of the shaded triangles in the figure below equal to $\frac{1}{2}$ the area of the entire rectangle?

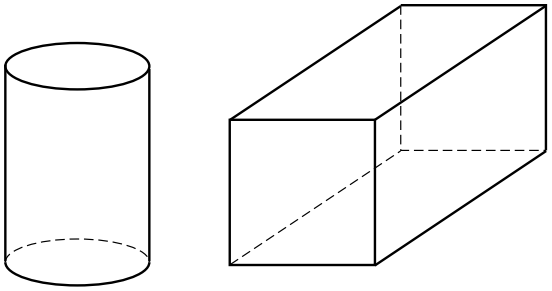


- Does the ratio of the circumference of a circle to its radius depend on the size of the circle? Why or why not?

- Suppose you wanted to find the area of the shaded region below (i.e., the region between the two circles). What measurement would you need to know? If you knew the circumference of each of the two circles, could you find the area? How about vice versa?



- If a container has the shape of a cylinder as shown below left, what measurements would you need to know to compute the volume? What if the container has the shape of a rectangular solid as shown below right? Could you find the volume if you knew only the total surface area (i.e., the sum of the areas of all six rectangular faces)?



- What are some different ways to express rates? How is a rate related to a ratio?

- What are some other situations in which you might have to apply a graduated rate scale?

- If a parking garage charges $3.50 for the first hour and $1.50 for each hour thereafter, up to a maximum charge of $14.00, how does the total charge for 10 hours of parking compare with the total charge for 8 hours of parking?

- How are distance traveled, rate (speed), and time traveled related? How would the rate be expressed in terms of the distance and time?

- The rate at which an object travels is called the average speed; however, you CANNOT compute *average speed* by taking the average (arithmetic mean) of individual rates. If a car travels at 30 miles per hour for half of the distance traveled and at 50 miles per hour for the other half, then the average speed for the entire distance is *not* 40 miles per hour, or the average (arithmetic mean) of the two rates. Why not? Why is the average speed actually less than 40 miles per hour?

- Assess the claim that an interest rate of 6% is 2% "more than" an interest rate of 4%. How would you compare an interest rate of 6% with an interest rate of 4% ?

- The data from what types of situations can be displayed effectively using a line graph?

- In a bar graph, what feature of each of the bars is pertinent to the data represented? Is the area of each bar relevant?

- If you used a circle graph to depict the results of a survey of ice-cream preferences, how would you indicate that 7 of the 28 students in the survey liked strawberry ice cream best?

- Which type of graph is most useful for showing the distribution of a family's monthly expenses?

- What are some advantages in presenting data in a table as opposed to using one of the types of graphs discussed above? What are some disadvantages?

- Consider the list of values 1, 2, 0, 4, 1, 3, 3, 1, 2, 0, 4, 5, 2, 3, 2, 3, 2, 4, 1, 2, 3, 0, 2, 3, 1. These values could represent the number of children in each of 25 families. Group these data into a two-column table with the first column listing each different value (x) and the second column listing the frequency (f) of occurrence for each of these different values. Do you see how the table you constructed provides a quick summary of the data? It also simplifies the calculation of certain statistical measures such as average, median, mode, etc. (See the topic "Determine the mean, median, mode, and range of sets of data" below.)
- What are some examples of sets of data that can be analyzed using spreadsheets?
- A storeowner creates a spreadsheet to analyze the store's inventory of purchases. If one column is headed "Item," a second column headed "Number Purchased," and a third column headed "Price per Unit Purchased," what formula relates the entries in the second and third columns? If these values are used for a fourth column, what would be an appropriate heading for the column?
- If 2, 4, 6, 8, and 10 are the first five numbers in a list, must the sixth number be 12 ? Would your answer change if you were told that the numbers are generated by a formula? Suppose the list above represented a child's accumulated savings, in dollars, at the end of each successive week. What would you need to know to be able to find the savings at the end of the 10th week?
- A certain quantity in an experiment doubles every 15 seconds. How could you use this pattern of behavior to determine how many times as much of the quantity there will be after 2 minutes?
- Suppose the water level of a river rose at a constant rate during a 24-hour period. If you knew the water level at the end of the 6th hour and also at the end of the 12th hour, could you determine the water level after the 20th hour? If so, how?
- If the amount of a quantity changes with time and is represented in a graph as a straight line, what can you infer about the change in the quantity during two different 1-hour time periods?
- Is the average of three different numbers ever greater than any one of them? Why or why not?
- Is it possible to find the average of 8 numbers without knowing the numbers themselves?
- How is a weighted average similar to the simple average, or arithmetic mean, mentioned above? When would it be appropriate to find a weighted average?
- Suppose 7 of 12 scores are closer to 100 than to 60. Can you conclude that the average of the 12 scores is greater than 80 ?
- Can you compute the median of 20 home prices if you know the sum of the prices, but not the prices themselves?
- How can you find the median of a set of data that is displayed in a frequency table (see under the topic "Interpret data based on charts, graphs, tables, and spreadsheets" above)? If there are 7 different values and they are given in increasing order, must the median be equal to the 4th value?
- Can a set of data have more than one mode? More than one median? Can you think of one or more situations in real life in which knowing the mode of a set of data would be useful?
- What numbers in a set of data does the range of data depend on? Can the range be less than the least number in the set? More than the greatest number?
- Is it possible for the range of a set of data to be 0 ? What if there are at least two different numbers in the set?
- Can the median be equal to the average? If one value in a set is much larger (or smaller) than the others, which would be affected, the average or the median?

- Which would be a more appropriate statistic to use in reporting annual family income in the United States in a given year—the average or the median?
- Can the probability of an occurrence be equal to 2 ? Equal to 1 ? In each case, why or why not? What does it mean to say that the probability is 0 that a student to be selected at random from a group will be a boy? That the probability is $\frac{1}{2}$?
- Suppose you want to find the probability that a ball to be selected at random from a box of solid-colored balls will be green. What different kinds of information would be sufficient? Would it be sufficient to know the total number of balls in the box? To know the fraction of balls in the box that are red?
- Continuing with the situation above of the balls in the box, how could you find the probability that the ball to be selected will be green if you were told the fraction of balls in the box that are *not* green?

III. Citizenship and Social Science

The questions in this section of the test will assess test takers' knowledge, understanding, and ability to use the major concepts and modes of inquiry from the social sciences, with an emphasis on the ability to make connections and comparisons among major historical events and ideas, especially those that have connections to contemporary events and problems. Test questions from the following four thematic areas also address the test takers' ability to make informed decisions as citizens of a culturally diverse democratic society and interdependent world.

A. Historical Continuity and Change

1. Demonstrate the ability to use chronological thinking skills and to use and analyze historical data (e.g., timelines, maps, graphs, and tables)
2. Distinguish between fact and opinion with respect to primary and other historical documents (e.g., U.S. Declaration of Independence, U.S. Constitution, essays, speeches)
3. Demonstrate understanding of multiple points of view with respect to primary and other historical documents (e.g., essays, famous speeches, interview transcripts, personal narratives)
4. Demonstrate understanding of the significance of historical artifacts, oral traditions, and historical places (e.g., religious holy sites, ancient cities)
5. Identify and demonstrate understanding of the impact of individuals, groups, religions, social organizations, and movements on history (e.g., Susan B. Anthony, Abraham Lincoln, Mohammed, Mahatma Ghandi, Eleanor Roosevelt, imperialism, worldwide immigration and cultural diffusion, the Industrial Revolution, women's and Civil Rights movements, post–Second World War technological advances)
6. Identify and demonstrate understanding of the causes, results, and consequences of social, political, economic, and military events (e.g., the U.S. Revolutionary War and Civil War, independence struggles, the slave trade, U.S. westward expansion, the First and Second World Wars, industrialization, and immigration)

B. People, Places, and Geographic Regions

1. Demonstrate understanding of the interaction between people and places, especially the impact of human activity on the physical environment, the environment's impact on people's lives and culture, and human adaptation to the environment
2. Demonstrate the ability to use basic geographic literacy skills (e.g., geographic tools: maps, graphs, charts)

C. Civics and Government

1. Demonstrate an understanding of major systems of government and how they function, including the major features of the U.S. political system
2. Demonstrate an understanding of rights and responsibilities of U.S. citizens (e.g., voting, taxation, civic participation)

D. Scarcity and Economic Choice

1. Demonstrate an understanding of the economic factors and principles that affect individuals, institutions, nations, and events, and how economic factors interact with other factors, such as geographic features and cultural values

Discussion areas: Citizenship and Social Studies

- Make your own timeline of major events in United States and world history. Your world-history timeline will start with events that occurred in the period referred to as Before the Common Era (B.C.E.). The outline of United States history will begin with the 1400's. Keep in mind that Native Americans were here for thousands of years before that. Put each of the events listed below on your timeline in the correct century, and then describe important trends in political, military, social, religious, and economic history.
- Why did opponents of the United States Constitution insist on the addition of the Bill of Rights to the Constitution before agreeing to support it?
- Identify each of the documents, locations, or artifacts above and explain its significance, as well as the group or religion for which it had significance. What can be learned about different cultures or religions from each item?
- What are the principal economic, technological, social, and cultural advancements or practices for which each of the civilizations above is well known?
- Explain how the lives and works of the following individuals helped to shape the modern world: Leonardo daVinci, Michelangelo, Sir Isaac Newton, Copernicus, Galileo, Martin Luther, John Locke.
- What were the goals and objectives of early explorers in their voyages? What discoveries and knowledge did they draw on to aid them in their explorations?
- What were the strengths and weaknesses of the Articles of Confederation?
- What legislation passed under the Articles of Confederation permanently affected the territorial composition of the United States?
- Why did the Industrial Revolution create a desire among European powers for overseas colonies in Africa, Asia, and the Pacific Rim?
- In addition to women's rights, which nineteenth-century reform movements heavily involved women?
- Which groups banded together to form the Populist movement after the American Civil War? How successful were they in achieving their goals?
- Explain how each of the geographical areas encompassing the 50 states of the United States came under the jurisdiction of the United States government.
- What effects did the following have on the compromises attempted by Congress to keep the nation together prior to the American Civil War?
  - The Dred Scott decision (1857) in the United States Supreme Court
  - Discussion of "popular sovereignty" in the Lincoln-Douglas debates (1858)
- Describe the role of the following revolutionary leaders: Mao Zedong, Lenin, Stalin.
- What factors contributed to the emergence of communism in the Soviet Union and fascism in Germany, Italy, and Japan?
- Identify the contributions made in modern independence movements by the following individuals: Nelson Mandela, Mohandas Gandhi.
- Why did the Progressives as a movement succeed in areas in which the Populists had failed?
- Why were critics of the New Deal unhappy with the policies pursued by Franklin D. Roosevelt to end the Great Depression?
- How did the end of the Second World War affect population distribution, the birth rate, and the standard of living of the majority of Americans?
- How were the "domino theory" and the policy of containment used to justify military alliances and the involvement of the United States in the world during the Cold War?
- How do the coordinates of latitude and longitude help to establish the location of a place on Earth?

- Explain how Earth's parallels and meridians are organized.
- Distinguish between renewable and nonrenewable resources.
- Classify each of the following as a renewable or nonrenewable resource: minerals, forests, fossil fuels, animal life.
- How can geography be helpful in interpreting past or present events or situations such as the westward movement in the United States, Cold War strategy, and contemporary conflicts in the Middle East?
- How can geography help us to understand the consequences of artificially-created political boundaries?
- What are the causes and consequences of deforestation and desertification?
- What techniques or practices can be used to prevent or reduce the negative impacts of deforestation and desertification?
- Explain how the following climates differ from one another: tropical, dry, middle latitude, high latitude, and highland.
- How do modern political thinkers who favor constitutional democracies differ from their predecessors on the origins of the power to govern and how power should be distributed?
- Compare and contrast the views of twentieth-century political theorists and revolutionaries on the origins of the power to govern and how power should be distributed.
- How does the operation of parliamentary systems of government differ from presidential forms of government?
- In what way did the concepts expressed in the Magna Carta and the Mayflower Compact contribute to the development of the rights of individuals as they are legislated in the United States today?
- How do the procedures established in the Constitution to ratify a treaty or to declare war illustrate the principle of checks and balances?
- How does the distribution of powers in the Constitution—in what political scientists refer to as expressed, implied, concurrent, and reserved powers—affect the relationship between the federal government and the states?
- Which United States Supreme Court cases have been considered landmark cases in the areas of civil rights, the right to privacy, and the rights of accused persons? What important legal principles did they establish?
- What are some examples of laws dealing with rights and privileges commonly exercised by individuals that vary from state to state?
- What does the expression "majority rule with minority rights" mean? How is it applied to government decision making in the United States?
- How does the implementation of measures such as the minimum wage and rent controls demonstrate attempts to modify the operation of the laws of supply and demand?
- What are some key ways in which division of labor and specialization improve people's lives?
- How does an increase or decrease in the international value of the dollar affect the demand for American-made products outside the United States?

IV. Science

The Science section of the test focuses on assessing the candidate's general background knowledge and understanding of the fundamental facts, basic concepts, principles, processes, methods, and skills that are common to the various scientific disciplines.

It is important for teachers to have a basic understanding of:

A. Nature and History of Science

1. Understand common methods and tools used gather data, such as using thermometers and microscopes, and is familiar with common units of measurement, such as temperature scales, mass, distance, volume, pressure, and energy
2. Identify and use the elements of scientific inquiry for problem solving, including observations, hypotheses, theories, experimental design, and sources of error
3. Recognize important scientific developments and contributions made by major historical figures
4. Interpret and draw conclusions from scientific data, including those presented in tables, graphs, maps, and charts

B. Basic Principles and Fundamentals of Science

1. Understand basic concepts of physics, including forces and motion, speed and acceleration, gravity, mass and weight, static electricity, magnetism, and properties of light, color, and sound
2. Understand energy relationships and transformations in both living and nonliving contexts, including conservation of energy; kinetic and potential energy; heat transfer by conduction, convection, and radiation; properties of solids, liquids, and gases; and changes of state such as melting and evaporation
3. Understand basic concepts of chemistry, including atomic structure, elements, compounds, mixtures, physical properties, common chemical reactions, pH and acid-base properties, and solubility of common substances
4. Understand basic biological concepts, including cell structure and processes; photosynthesis; biological molecules such as DNA, proteins, and carbohydrates; simple genetics, general characteristics of common organisms; basic structure and functions of the human body; and processes by which species change over time including evolution
5. Understand basic concepts of ecology, including ecosystems, food chains, population changes, and relationships between species such as predator-prey
6. Understand basic concepts in earth and space science including rocks; plate tectonics; volcanoes; earthquakes; the water cycle; weathering; erosion; geologic history; ocean tides; weather and the atmosphere; climate; and astronomy, including the characteristics of the solar system, stars, galaxies, and other features of the universe

C. Science, Technology, and Social Perspectives

1. Demonstrate understanding of the impact of science and technology on the environment and human affairs, including enhanced greenhouse effect, waste disposal, and air and water pollution
2. Be aware of the impact of science on public health issues, such as nutrition, disease, and medical technologies
3. Understand the role of science and technology in the management of natural resources and the production of energy, including renewable and nonrenewable resources, conservation, recycling, alternative energy sources, and the advantages and disadvantages of various types of energy production

Discussion areas: Science

- What methods could be used to obtain accurate quantitative data about the deer population in a local community over a three-year period?
- Assuming that the deer population increased by 25 percent over three years, list other pieces of information, and their respective sources, that might be helpful in explaining the observed change.
- What are some other examples of measuring instruments?

- Which graphic method of presentation would be most suitable for illustrating the relative amounts of solid waste that are recycled, incinerated, and disposed of in landfills?
- How are control variables and experimental variables used in scientific investigations?
- Design an experiment to examine the effect of temperature on seed germination.
- How has most scientific work been built on earlier knowledge over the centuries?
- Why was acceptance of some major scientific explanations so difficult (e.g., those of Copernicus, Galileo, Darwin)?
- The experimental values obtained for the boiling point of three samples of distilled water were 93°C, 91°C, and 88°C. What are possible sources of errors in the experiment if the accepted value for the boiling point of water is 100°C ?
- A balloon is rubbed on a sweater and placed near a narrow stream of running water. Explain why the stream of water is deflected toward the balloon.
- Compare the frictional force experienced when a box of textbooks is pushed across a floor and a bicycle is pushed across the same floor.
- Why do we see our breath on a cold day but not on a warm day?
- Why does rubbing your hands together make them warmer?
- How is the energy of a rock sitting on the top of a hill different from the energy of a rock sitting at the bottom of the same hill?
- How does the energy associated with a bicycle change as it speeds up going downhill?
- Does air take up space?
- Sometimes when two chemicals are combined, a chemical reaction takes place. What are some of the signs of such a chemical reaction?
- Understand the basic difference between photosynthesis and cellular respiration.
- List three organelles within the cell and identify the function of each.
- Compare the relative number of chromosomes in a cell that has undergone mitosis with one from the same organism that has undergone meiosis.
- Cytochrome c, a complex protein required for cellular respiration, is more similar in monkeys and cows than it is in monkeys and fish. What does this suggest about the relationship between monkeys and cows as compared to that between monkeys and fish?
- What is the fundamental difference, at the cellular level, between a corn plant and a bacterium?
- The scientific name for a dog is *Canis familiaris*. What level of classification is indicated by the name "*Canis*"?
- What are the roles of producers and decomposers in a food web?
- Wolves are predators that prey on deer. How has the deer population responded in areas where wolves have been eradicated?
- Why do the coldest temperatures in the Northern Hemisphere occur during the month of January even though Earth is closer to the Sun in January than it is in July?
- How does nitrogen, the most abundant element in Earth's atmosphere, become incorporated into biological molecules in organisms?
- What is the environmental impact of the increased level of carbon dioxide in the atmosphere as a result of the combustion of fossil fuels for energy?
- Describe the connection between chloroflurocarbons (CFCs) and the increased risk of skin cancer.
- What are some examples of genetic engineering?
- What some examples of common diseases caused by a virus?

- Identify the social, political, and economic issues related to the mass production of fuel-cell powered automobiles.
- Describe the costs and benefits of maintaining a habitable space station.
- List the economic and environmental trade-offs of solar energy sources.

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 answer 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 https://www.ets.org/praxis/institutions/scores/passing 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 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 Brailler
- 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 https://www.ets.org/s/praxis/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
- 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 (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
- *Praxis* Passing Scores, 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/dates_centers 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

Measuring the Power of Learning.®

www.ets.org