

—Update on the *Praxis*® Core Academic Skills for Educators Test —

Praxis Core is Changing

The *Praxis*® Core Academic Skills for Educators (Core) Test measures academic skills that are important to success in preparation to be an educator. As of September 2019, the content of the test—specifically the Mathematics subtest—will change. This update tells why the test is changing, gives a picture of how the new test will be different, and provides a *preview copy* of the Mathematics Study Companion showing, in detail, what the new test measures.

Why is Core Changing?

The changes resulted from a systematic re-examination of the skills that Core measures. Each skill in each subarea was examined by an expert panel of educator preparation faculty. The panel considered each skill based on how critical it is to success in preparation.

The process of re-examination was designed to ensure that all the skills Core is measuring are confirmed as critical—skills that are important for success regardless of which path a candidate takes through the program and regardless of which grades or subjects the candidate will teach.

- Over 200 educator preparation faculty contributed their judgment to the redesign, either through detailed surveys calling for evaluation of every skill measured, or through their participation on a national expert panel.
- All faculty involved in redesign taught courses that are common across all certification areas.
- All skills kept on the test were clearly confirmed as important by the teacher educators engaged in redesign.

How is the New Core Mathematics Test Different?

The new Mathematics test has a change in overall focus, with

- increased emphasis on *Data Interpretation and Representation, Statistics, and Probability* as critical for teacher preparation, and
- reduced weight on *Algebra and Geometry*

About Core Reading and Writing

The *Praxis* Core Reading and Writing tests are not changing. The skills assessed in these tests were reconfirmed as important in the re-examination.

For Geometry, the test also now includes a reference sheet for geometric formulas, so the test is not assessing candidates on their recall of those formulas.

A number of mathematical topics identified as less important for educator preparation were *removed*, such as

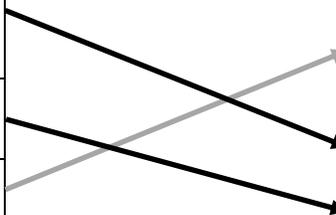
- identifying rational vs. irrational numbers
- solving problems with radicals
- working with functions
- solving problems involving three-dimensional figures (such as volume and surface area of a cone)

CURRENT

Category	Approx. %
I. Number and Quantity	30%
II. Algebra and Functions	30%
III. Geometry	20%
IV. Statistics and Probability	20%

NEW

Category	Approx. %
I. Number and Quantity	36%
II. Data Interpretation and Representation, Statistics, and Probability	32%
III-A. Algebra	20%
III-B. Geometry	12%



Core Academic Skills for Educators: Mathematics (5733)

Test at a Glance

Test Name	Core Academic Skills for Educators: Mathematics		
Test Code	5733		
Time	90 minutes		
Number of Questions	56		
Format	Selected-response questions—select one answer choice Selected-response questions—select one or more answer choices Numeric-entry questions On-screen calculator available		
Test Delivery	Computer delivered		
	Content Categories	Approximate Number of Questions*	Approximate Percentage of Examination
	I. Number and Quantity	20	36%
	II. Data Interpretation and Representation, Statistics, and Probability	18	32%
	III. Algebra and Geometry	18	32%
	Algebra	11	20%
Geometry	7	12%	
* Includes both scored and unscored (pretest) questions. Depending on the number of pretest questions included in each scoring category, the total number of questions in that category may vary from one form of the test to another.			

About This Test

The *Praxis*® Core Academic Skills for Educators (or *Praxis*® Core) Mathematics test measures mathematical skills needed to prepare successfully for a career in education. Questions focus on key concepts of mathematics and the ability to solve problems and to reason in a quantitative context. Many questions require the integration of multiple skills to achieve a solution.

The test assesses mathematics across a range of mathematical content areas:

Number and Quantity includes understanding of place value and the properties of whole numbers. Questions call for solving problems involving integers, decimals, and fractions; and solving problems involving ratios, proportions, and percent. Some questions call for solving real-life problems—e.g., identifying relevant numbers, information, or operations, and solving problems involving measurement units.

Data Interpretation and Representation, Statistics, and Probability includes understanding of how data and graphs correspond. Questions call for reading and interpreting visual displays of quantitative information; making inferences from data displays; determining mean, median, and/or mode for a data sample; and assigning a probability to an outcome.

Algebra includes the ability to write an equation or expression that models a real-life or mathematical problem. Questions call for solving word problems; solving simple linear equations and simple quadratic equations (e.g., $x^2 = 49$); following an arithmetic or algebraic procedure; and identifying or generating equivalent algebraic expressions. Some questions will assess understanding of the properties (commutative, associative, and distributive) of the basic arithmetic operations, but will not test the names of those properties.

Geometry includes the understanding and application of the properties of two-dimensional shapes. Questions call for solving geometric problems, using facts about angles and about the similarity or congruence of geometric figures; and solving problems using formulas for area and circumference of a circle, formulas for the perimeter and area of a triangle or rectangle, and the formula for the volume of a rectangular prism (a box). A reference sheet with geometric formulas needed for the test is available as a Help screen.

The test is 90 minutes long and contains 56 questions. This test may contain some questions that will not count toward your score.

The test will contain several types of questions:

- **Selected-response—select one answer choice:** Questions for which you select only one answer choice from a list of choices, by clicking on an oval.
- **Selected-response—select one or more answer choices:** Questions for which you select one or more answers from a list by clicking on checkboxes. Note: A question may or may not specify the number of choices to select.

- **Numeric-entry questions:** Questions for which you enter your answer—an integer or a decimal—in an answer box. Some questions may call for you to enter a fraction by putting values in two boxes—one for the numerator and one for the denominator.

An on-screen calculator is available for this test. The “Transfer Display” button can be used on numeric entry questions with a single answer box to transfer what’s on the calculator display to the answer box.



Test Specifications

I. Number and Quantity

1. Solve problems involving integers, decimals, and fractions
2. Solve problems involving ratios and proportions
3. Solve problems involving percent
4. Solve problems involving constant rates (e.g., miles per hour, gallons per mile, cubic feet per minute)
5. Demonstrate an understanding of place value, naming of decimal numbers, and ordering of numbers
6. Demonstrate an understanding of the properties of whole numbers (e.g., factors, multiples, even and odd numbers, prime numbers, divisibility)
7. Identify counterexamples to statements using basic arithmetic
8. Solve real-life problems by identifying relevant numbers, information, or operations (including rounding)
9. Solve problems involving units, including unit conversion and measurements

II. Data Interpretation and Representation, Statistics, and Probability

1. Work with data and data representations to solve problems
2. Solve problems involving measures of central tendency (e.g., mean, median) and spread (e.g., range, standard deviation)
3. Use data from a random sample to draw inferences about characteristics of a population
4. Identify positive and negative linear relationships in scatterplots
5. Use a linear model for a data set to make predictions
6. Differentiate between correlation and causation
7. Compute simple probabilities, and use probabilities to solve problems

III. Algebra and Geometry

Algebra

1. Demonstrate an understanding of the properties (commutative, associative, and distributive) of the basic operations (addition, subtraction, multiplication, and division) without needing to know the names of the properties
2. Demonstrate the ability to follow an arithmetic or algebraic procedure (e.g., using a step-by-step procedure, using a simple flowchart, applying a simple recurrence sequence) by carrying it out or analyzing it
3. Use properties of operations to identify or generate equivalent algebraic expressions (e.g., multiplication of whole numbers gives the same result as repeated addition, multiplication by 0.1 gives the same result as division by 10)
4. Write an equation or expression that models a real-life or mathematical problem

5. Solve word problems, including problems involving linear relationships and problems that can be represented by Venn diagrams
6. Solve linear equations in one variable algebraically
7. Solve simple quadratic equations (e.g., $x^2 = 49$)

Geometry

1. Utilize basic properties of common two-dimensional shapes to solve problems
2. Utilize facts about angles to solve problems
3. Utilize facts about congruency and similarity of geometric figures to solve problems
4. Use the formulas for the area and circumference of a circle to solve problems
5. Use the formulas for the perimeter and area of a triangle and a rectangle and the formula for the volume of a rectangular prism (box) to solve problems