

Praxis® Study Plan

Core Academic Skills for Educators: Mathematics (5733)

Test Content Categories	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
I. Number and quantity (36%)					
A. Solve problems involving integers, decimals, and fractions					
B. Solve problems involving ratios and proportions					
C. Solve problems involving percent					
D. Solve problems involving constant rates (e.g., miles per hour, gallons per mile, cubic feet per minute)					
E. Demonstrate an understanding of place value, naming of decimal numbers, and ordering of numbers					
F. Demonstrate an understanding of the properties of whole numbers (e.g., factors, multiples, even and odd numbers, prime numbers, divisibility)					
G. Identify counterexamples to statements using basic arithmetic					
H. Solve real-life problems by identifying relevant numbers, information, or operations (including rounding)					

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I. Solve problems involving units, including unit conversion and measurements					
II. Data interpretation and representation, statistics, and probability (32%)					
A. Work with data and data representations to solve problems					
B. Solve problems involving measures of central tendency (e.g., mean, median) and spread (e.g., range, standard deviation)					
C. Use data from a random sample to draw inferences about characteristics of a population					
D. Identify positive and negative linear relationships in scatterplots					
E. Use a linear model for a data set to make predictions					
F. Differentiate between correlation and causation					
G. Compute simple probabilities, and use probabilities to solve problems					
III. Algebra and geometry (32%)					

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A. 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					

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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., $x^2 = 49$)					
B. 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					