

Study Resources for the *Praxis*® Elementary Education: Mathematics Test (5003)

The links below allow you to connect content topics on this *Praxis*® test directly to free Khan Academy study resources.

<i>Praxis</i> Elementary Education: Mathematics (5003) Content Topics	Study Resources
I. Numbers and Operations	Lesson
A. Understands the place value system	
1. Writes numbers using base-10 numerals, number names, and expanded form	Praxis Math: Naming and ordering numbers Pre-algebra: Arithmetic properties
2. Composes and decomposes multi-digit numbers	
3. Given a digit, identifies the place the digit is in and its value in that place	
4. Recognizes that a digit in one place represents ten times what it represents in the place to its right and one-tenth what it represents in the place to its left, and extends this recognition to several places to the right or left	
5. Uses whole-number exponents to denote powers of 10	
6. Rounds multi-digit numbers to any place value	
B. Understands operations and properties of rational numbers	Praxis Math: Rational number operations Praxis Math: Naming and ordering numbers Arithmetic
1. Solves multistep mathematical and real-world problems using addition, subtraction, multiplication, and division of rational numbers	Algebra basics: Foundations Pre-algebra: Fractions Pre-algebra: Decimals
2. Understands various strategies and algorithms used to perform operations on rational numbers	Pre-algebra: Fractions Pre-algebra: Decimals

3. Recognizes concepts of rational numbers and their operations	Pre-algebra: Arithmetic properties Pre-algebra: Fractions Pre-algebra: Decimals
4. Solves problems using the order of operations, including problems involving whole number exponents	Algebra basics: Expressions with exponents
5. Identifies properties of operations (e.g., commutative, associative, distributive) and uses them to solve problems	Pre-algebra: Arithmetic properties
6. Represents rational numbers and their operations in different ways	Pre-algebra: Fractions Pre-algebra: Decimals
7. Compares, classifies, and orders rational numbers	Pre-algebra: Arithmetic properties Pre-algebra: Fractions Pre-algebra: Decimals
8. Converts between fractions, decimals, and percents	Pre-algebra: Decimals Pre-algebra: Ratios, rates, proportions
C. Understands proportional relationships and percents	Praxis Math: Ratios and proportions Praxis Math: Percentages Praxis Math: Rates
1. Applies the concepts of ratios and unit rates to describe relationships between two quantities	Pre-algebra: Ratios, rates, proportions
2. Understands percent as a rate per 100	Pre-algebra: Ratios, rates, proportions
3. Solves unit-rate problems	Pre-algebra: Ratios, rates, proportions
4. Uses proportional relationships to solve ratio and percent problems	Pre-algebra: Ratios, rates, proportions Algebra basics: Writing & solving proportions
D. Knows how to use basic concepts of number theory	Praxis Math: Number concepts
1. Identifies and uses prime and composite numbers	Pre-algebra: Factors and multiples
2. Finds factors and multiples of numbers	Pre-algebra: Factors and multiples

E. Knows a variety of strategies to determine the reasonableness of results	Praxis Math: Pre-algebra word problems
1. Recognizes the reasonableness of results within the context of a given problem	
2. Uses mental math, estimation, and rounding strategies to solve problems and determine reasonableness of results	
II. Algebraic Thinking	Lesson
A. Knows how to evaluate and manipulate algebraic expressions, equations, and formulas	Praxis Math: Algebraic properties Praxis Math: Equivalent expressions Praxis Math: Creating expressions and equations Praxis Math: Algebraic word problems Praxis Math: Quadratic equations
1. Differentiates between algebraic expressions and equations	6th grade: Variables and expressions Pre-algebra: Equations, expressions, and inequalities Algebra basics: Algebraic expressions
2. Adds and subtracts linear algebraic expressions	6th grade: Variables and expressions 7th grade: Expressions, equations, & inequalities Pre-algebra: Equations, expressions, and inequalities Algebra basics: Algebraic expressions
3. Uses the distributive property to generate equivalent linear algebraic expressions	6th grade: Variables and expressions 7th grade: Expressions, equations, & inequalities Pre-algebra: Equations, expressions, and inequalities Algebra basics: Algebraic expressions
4. Evaluates simple algebraic expressions (i.e., one variable, binomial) for given values of variables	6th grade: Variables and expressions 7th grade: Expressions, equations, & inequalities Pre-algebra: Equations, expressions, and inequalities Algebra basics: Algebraic expressions Algebra basics: Quadratics and polynomials
5. Uses mathematical terms to identify parts of expressions and describe expressions	6th grade: Variables and expressions Pre-algebra: Equations, expressions, and inequalities