

Alignments of PSAT/NMSQT Skill Categories and State Standards

PSAT/NMSQT Skill Category and Description of Skills	Arkansas Math: Curriculum Framework 2004		
	Course/ Level	Standard	Standard ID
Algebra and Functions Solve problems using algebraic expressions and symbols to represent relationships, patterns and functions of different types.	Algebra III	ELF.3.AIII.2 Develop and apply, with and without appropriate technology, the laws of logarithms and the change-of-base formula to simplify and evaluate expressions	ELF.3.AIII.2
	Algebra III	ELF.3.AIII.3 Solve, with and without appropriate technology, equations and real world problems involving exponential and logarithmic expressions graphically, algebraically and numerically	ELF.3.AIII.3
	Algebra III	ELF.3.AIII.4 Find, with and without appropriate technology, the domain, range, intercepts, and asymptotes of logarithmic and exponential functions	ELF.3.AIII.4
	Algebra III	ELF.3.AIII.5 Draw and analyze, with and without appropriate technology, graphs of logarithmic and exponential functions	ELF.3.AIII.5
	Algebra III	LQF.1.AIII.1 Evaluate, add, subtract, multiply, divide and compose functions and determine appropriate domain and range restrictions	LQF.1.AIII.1
	Algebra III	LQF.1.AIII.2 Develop, write, and graph, with and without appropriate technology, equations of lines in slope-intercept, point-slope, and standard forms given a point and the slope	LQF.1.AIII.2.a
	Algebra III	LQF.1.AIII.2 Develop, write, and graph, with and without appropriate technology, equations of lines in slope-intercept, point-slope, and standard forms given two points	LQF.1.AIII.2.b
	Algebra III	LQF.1.AIII.2 Develop, write, and graph, with and without appropriate technology, equations of lines in slope-intercept, point-slope, and standard forms given real world data	LQF.1.AIII.2.c
	Algebra III	LQF.1.AIII.4 Perform computations with radicals: simplify radicals with different indices	LQF.1.AIII.4.a
	Algebra III	LQF.1.AIII.4 Perform computations with radicals: add, subtract, multiply and divide radicals	LQF.1.AIII.4.b
	Algebra III	LQF.1.AIII.4 Perform computations with radicals: solve equations that contain radicals or radical expressions	LQF.1.AIII.4.c
	Algebra III	LQF.1.AIII.5 Solve, with and without appropriate technology, quadratic equations by extracting the square root	LQF.1.AIII.5.a
	Algebra III	LQF.1.AIII.5 Solve, with and without appropriate technology, quadratic equations by graphing	LQF.1.AIII.5.b

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Algebra and Functions Solve problems using algebraic expressions and symbols to represent relationships, patterns and functions of different types.	Algebra III	LQF.1.AIII.5 Solve, with and without appropriate technology, quadratic equations by factoring	LQF.1.AIII.5.c
	Algebra III	LQF.1.AIII.5 Solve, with and without appropriate technology, quadratic equations by completing the square	LQF.1.AIII.5.d
	Algebra III	LQF.1.AIII.5 Solve, with and without appropriate technology, quadratic equations by using the quadratic formula	LQF.1.AIII.5.e
	Algebra III	LQF.1.AIII.6 Graph, with and without appropriate technology, functions defined as piece-wise and step	LQF.1.AIII.6
	Algebra III	LQF.1.AIII.7 Solve, with and without appropriate technology, systems of linear and quadratic equations and inequalities with two or more variables	LQF.1.AIII.7
	Algebra III	LQF.1.AIII.8 Apply, with and without appropriate technology the concepts of functions to real world situations including linear programming	LQF.1.AIII.8
	Algebra III	PRF.2.AIII.1 Determine the factors of polynomials by using factoring techniques including grouping, the difference of two squares, and the sum or difference of two cubes	PRF.2.AIII.1.a
	Algebra III	PRF.2.AIII.1 Determine the factors of polynomials by using synthetic division	PRF.2.AIII.1.b
	Algebra III	PRF.2.AIII.2 Investigate and sketch the graphs of polynomial and rational functions using the characteristics of domain and range, upper and lower bounds, maximum and minimum points, asymptotes and end behavior, zeros, multiplicity of zeros, y-intercepts, and symmetry with and without appropriate technology	PRF.2.AIII.2
	Algebra III	PRF.2.AIII.3 Simplify, add, subtract, multiply, and divide with rational expressions	PRF.2.AIII.3
	Algebra III	PRF.2.AIII.4 Describe, with and without appropriate technology, the fundamental characteristics of rational functions: zeros, discontinuities (including vertical asymptotes), and end behavior (including horizontal asymptotes)	PRF.2.AIII.4
	Algebra III	PRF.2.AIII.5 Establish the relationship between radical expressions and expressions containing rational exponents, and simplify variable expressions containing rational exponents using the laws of exponents	PRF.2.AIII.5
	Algebra III	PRF.2.AIII.6 Apply, with and without appropriate technology, the concepts of polynomial and rational functions to model real world situations	PRF.2.AIII.6

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Algebra and Functions Solve problems using algebraic expressions and symbols to represent relationships, patterns and functions of different types	Algebra III	SS.4.AIII.1 Develop, with and without appropriate technology, a representation of sequences recursively and explicitly	SS.4.AIII.1
	Algebra III	SS.4.AIII.2 Define and discriminate, with and without appropriate technology, between arithmetic and geometric sequences and series	SS.4.AIII.2
	Algebra III	SS.4.AIII.3 Solve, with and without appropriate technology, problems involving the sum (including Sigma notation) of finite and infinite sequences and series	SS.4.AIII.3
	Algebra III	SS.4.AIII.4 Determine, with and without appropriate technology, the n th term of a sequence given a rule or specific terms	SS.4.AIII.4
	Algebra III	SS.4.AIII.5 Use, with and without appropriate technology, sequences and series to solve real world problems	SS.4.AIII.5
	Algebraic Connections	LF.2.AC.1 Create, given a graph without an explicit formula, a written or oral interpretation of the relationship between the independent and dependent variables	LF.2.AC.1
	Algebraic Connections	LF.2.AC.2 Create, given a situation, a graph that models the relationship between the independent and dependent variables	LF.2.AC.2
	Algebraic Connections	LF.2.AC.3 Determine the independent and dependent variables, domain and range of a relation from an algebraic expression, graph, set of ordered pairs, or table of data	LF.2.AC.3
	Algebraic Connections	LF.2.AC.4 Interpret the rate of change (slope) and intercepts within the context of everyday life	LF.2.AC.4
	Algebraic Connections	LF.2.AC.5 Calculate the slope given two points	LF.2.AC.5.a
Algebraic Connections	LF.2.AC.5 Calculate the slope given a graph of a line	LF.2.AC.5.b	
Algebraic Connections	LF.2.AC.5 Calculate the slope given an equation of a line	LF.2.AC.5.c	

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Algebra and Functions Solve problems using algebraic expressions and symbols to represent relationships, patterns and functions of different types.	Algebraic Connections	LF.2.AC.6 Determine, using slope, whether a pair of lines are parallel, perpendicular, or neither	LF.2.AC.6
	Algebraic Connections	LF.2.AC.7 Write an equation given two points	LF.2.AC.7.a
	Algebraic Connections	LF.2.AC.7 Write an equation given a point and y-intercept	LF.2.AC.7.b
	Algebraic Connections	LF.2.AC.7 Write an equation given an x-intercept and y-intercept	LF.2.AC.7.c
	Algebraic Connections	LF.2.AC.7 Write an equation given a point and slope	LF.2.AC.7.d
	Algebraic Connections	LF.2.AC.7 Write an equation given a table of data	LF.2.AC.7.e
	Algebraic Connections	LF.2.AC.7 Write an equation given the graph of a line	LF.2.AC.7.f
	Algebraic Connections	LF.2.AC.8 Graph, with and without appropriate technology, functions defined as piece-wise and step	LF.2.AC.8
	Algebraic Connections	NF.4.AC.1 Factor polynomials greatest common factor	NF.4.AC.1.a
	Algebraic Connections	NF.4.AC.1 Factor polynomials binominals (difference of squares)	NF.4.AC.1.b

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Algebra and Functions Solve problems using algebraic expressions and symbols to represent relationships, patterns and functions of different types	Algebraic Connections	NF.4.AC.1 Factor polynomials trinomials	NF.4.AC.1.c
	Algebraic Connections	NF.4.AC.1 Factor polynomials combinations of the above	NF.4.AC.1.d
	Algebraic Connections	NF.4.AC.2 Simplify, add, subtract and multiply radical expressions	NF.4.AC.2
	Algebraic Connections	NF.4.AC.3 Solve, with and without appropriate technology, quadratic equations with real number solutions using factoring and the quadratic formula	NF.4.AC.3
	Algebraic Connections	NF.4.AC.4 Determine the independent and dependent variables, domain and range of a relation from algebraic equations, graphs, sets of ordered pairs, or tables of data	NF.4.AC.4
	Algebraic Connections	NF.4.AC.5 Identify and apply nonlinear functions to real world situations such as acceleration, area, volume, population, bacteria, compound interest, percent depreciation and appreciation, amortization, geometric sequences, etc.	NF.4.AC.5
	Algebraic Connections	NF.4.AC.6 Recognize function families including vertical shifts, horizontal shifts and reflections over the x-axis	NF.4.AC.6
	Algebraic Connections	SEI.3.AC.1 Solve, with and without appropriate technology, multi-step equations and inequalities with rational coefficients numerically, algebraically and graphically	SEI.3.AC.1
	Algebraic Connections	SEI.3.AC.2 Solve, with and without appropriate technology, systems of two linear equations and systems of two inequalities numerically, algebraically and graphically	SEI.3.AC.2
	Algebraic Connections	SEI.3.AC.3 Solve linear formulas and literal equations for a specified variable	SEI.3.AC.3
Algebraic Connections	SEI.3.AC.4 Use, with and without appropriate technology, coordinate geometry to represent and solve problems including midpoint, length of a line segment and Pythagorean Theorem	SEI.3.AC.4	
Algebraic Connections	SEI.3.AC.5 Determine and describe, with and without appropriate technology, the resulting change in the perimeter, area, and volume when one or more dimensions change (apply this idea in solving real world problems)	SEI.3.AC.5	

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Algebra and Functions Solve problems using algebraic expressions and symbols to represent relationships, patterns and functions of different types	Algebraic Connections	SEI.3.AC.6 Apply linear, piece-wise and step functions to real world situations that involve a combination of rates, proportions and percents such as sales tax, simple interest, social security, constant depreciation and appreciation, arithmetic sequences, constant rate of change, income taxes, postage, utility bills, commission, and traffic tickets	SEI.3.AC.6
	Transition to College Mathematics	EF.2.TM.1 Identify exponential growth or decay by creating tables, graphs, and mathematical models	EF.2.TM.1
	Transition to College Mathematics	EF.2.TM.2 Compare exponential models	EF.2.TM.2
	Transition to College Mathematics	EF.2.TM.3 Compare and contrast linear and exponential models	EF.2.TM.3
	Transition to College Mathematics	EF.2.TM.4 Make inferences and predictions using recursion on the table	EF.2.TM.4.a
	Transition to College Mathematics	EF.2.TM.4 Make inferences and predictions using inspection of the graph	EF.2.TM.4.b
	Transition to College Mathematics	EF.2.TM.4 Make inferences and predictions using algebraic manipulation on the model	EF.2.TM.4.c
	Transition to College Mathematics	EF.2.TM.5 Develop, with appropriate technology, an algebraic model through the regression process	EF.2.TM.5
	Transition to College Mathematics	EF.2.TM.6 Explain, conjecture, summarize, and defend results orally, in writing, and through the use of appropriate technology	EF.2.TM.6
	Transition to College Mathematics	LF.1.TM.1 Identify a linear relationship represented by a table, by a graph, and by symbolic forms	LF.1.TM.1

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Algebra and Functions Solve problems using algebraic expressions and symbols to represent relationships, patterns and functions of different types.	Transition to College Mathematics	LF.1.TM.2 Determine the initial condition and the rate of change in real world situations described by $y = mx + b$	LF.1.TM.2
	Transition to College Mathematics	LF.1.TM.3 Make inferences and predictions using recursion on the table	LF.1.TM.3.a
	Transition to College Mathematics	LF.1.TM.3 Make inferences and predictions using inspection on the graph	LF.1.TM.3.b
	Transition to College Mathematics	LF.1.TM.3 Make inferences and predictions using algebraic manipulation on the model	LF.1.TM.3.c
	Transition to College Mathematics	LF.1.TM.4 Explain, conjecture, summarize, and defend results orally, in writing and through the use of appropriate technology	LF.1.TM.4
	Transition to College Mathematics	MM.3.TM.1 Establish connections between tables and graphs and the symbolic form using geometric and algebraic models (quadratic, rational, etc.)	MM.3.TM.1
	Transition to College Mathematics	MM.3.TM.3 Make inferences and predictions using recursion on the table	MM.3.TM.3.a
	Transition to College Mathematics	MM.3.TM.3 Make inferences and predictions using inspection of the graph	MM.3.TM.3.b
	Transition to College Mathematics	MM.3.TM.3 Make inferences and predictions using algebraic manipulation on the model	MM.3.TM.3.c
	Transition to College Mathematics	MM.3.TM.4 Explain, conjecture, summarize, and defend results orally, in writing, and through the use of appropriate technology	MM.3.TM.4

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Communication Express mathematical ideas precisely and communicate them coherently and clearly in the language and notation of mathematics.	Algebra III	PRF.2.AIII.4 Describe, with and without appropriate technology, the fundamental characteristics of rational functions: zeros, discontinuities (including vertical asymptotes), and end behavior (including horizontal asymptotes)	PRF.2.AIII.4
	Algebra III	SS.4.AIII.2 Define and discriminate, with and without appropriate technology, between arithmetic and geometric sequences and series	SS.4.AIII.2
	Statistics	DA.4.S.1 Summarize distributions of univariate data by determining and interpreting measures of center, spread, position, boxplot, and effects of changing units on summary measures	DA.4.S.1
	Statistics	DA.5.S.4 Identify possible correlations between variables in a data set	DA.5.S.4
	Statistics	DA.5.S.5 Develop, use, and explain application and limitations of linear models and line of best fit (linear regression) in a variety of contexts	DA.5.S.5
	Statistics	DC.2.S.3 Identify biased sampling methods	DC.2.S.3
	Statistics	DC.2.S.4 Describe simple random sampling	DC.2.S.4
	Statistics	DC.2.S.6 Investigate and describe sampling techniques, such as simple random sampling, stratified sampling, and cluster sampling	DC.2.S.6
	Statistics	DC.2.S.8 Plan and conduct a survey to answer a question or address an issue, identify possible sources of bias, and describe ways to reduce bias	DC.2.S.8
	Transition to College Mathematics	EF.2.TM.1 Identify exponential growth or decay by creating tables, graphs, and mathematical models	EF.2.TM.1
	Transition to College Mathematics	EF.2.TM.6 Explain, conjecture, summarize, and defend results orally, in writing, and through the use of appropriate technology	EF.2.TM.6
	Transition to College Mathematics	LF.1.TM.1 Identify a linear relationship represented by a table, by a graph, and by symbolic forms	LF.1.TM.1
	Transition to College Mathematics	LF.1.TM.4 Explain, conjecture, summarize, and defend results orally, in writing and through the use of appropriate technology	LF.1.TM.4

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	Course/ Level	Standard	Standard ID
Communication Express mathematical ideas precisely and communicate them coherently and clearly in the language and notation of mathematics.	Transition to College Mathematics	MM.3.TM.4 Explain, conjecture, summarize, and defend results orally, in writing, and through the use of appropriate technology	MM.3.TM.4
	Transition to College Mathematics	PS.4.TM.2 Describe and summarize data numerically using central tendency variation, position statistics, and distributions	PS.4.TM.2
	Transition to College Mathematics	PS.4.TM.5 Explain, conjecture, summarize, and defend results orally, in writing, and through the use of appropriate technology	PS.4.TM.5
Connections Connect ideas from different areas of mathematics (particularly geometry and algebra) to state or solve abstract or applied problems.	Algebraic Connections	NF.4.AC.6 Recognize function families including vertical shifts, horizontal shifts and reflections over the x-axis	NF.4.AC.6
	Statistics	DA.5.S.3 Recognize the limitations of mathematical models based on sample data as representations of real world situations	DA.5.S.3
Data, Statistics, and Probability Analyze data, understand descriptive statistics, make inferences and determine the likelihood that certain events will occur.	Algebraic Connections	PS.1.AC.1 Apply counting techniques to determine the number of outcomes: tree diagram	PS.1.AC.1.a
	Algebraic Connections	PS.1.AC.1 Apply counting techniques to determine the number of outcomes: fundamental Counting Principle	PS.1.AC.1.b
	Algebraic Connections	PS.1.AC.1 Apply counting techniques to determine the number of outcomes: permutations (with and without repetition)	PS.1.AC.1.c
	Algebraic Connections	PS.1.AC.1 Apply counting techniques to determine the number of outcomes: Combinations	PS.1.AC.1.d
	Algebraic Connections	PS.1.AC.2 Conduct and interpret simple probability experiments using manipulatives (spinners, dice, cards, coins)	PS.1.AC.2.a
	Algebraic Connections	PS.1.AC.2 Conduct and interpret simple probability experiments using simulations (using random number tables, graphing calculators, or computer software)	PS.1.AC.2.b

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Data, Statistics, and Probability Analyze data, understand descriptive statistics, make inferences and determine the likelihood that certain events will occur.	Algebraic Connections	PS.1.AC.3 Compute and display theoretical and experimental probability including the use of Venn diagrams: Simple	PS.1.AC.3.a
	Algebraic Connections	PS.1.AC.3 Compute and display theoretical and experimental probability including the use of Venn diagrams: complementary	PS.1.AC.3.b
	Algebraic Connections	PS.1.AC.3 Compute and display theoretical and experimental probability including the use of Venn diagrams.:compound (mutually exclusive, inclusive, independent and dependent events)	PS.1.AC.3.c
	Algebraic Connections	PS.1.AC.4 Apply probability to real world situations such as weather prediction, game theory, fair division, insurance tables, and election theory	PS.1.AC.4
	Algebraic Connections	PS.1.AC.5 Interpret and evaluate, with and without appropriate technology, graphical and tabular data displays for consistency with the data	PS.1.AC.5.a
	Algebraic Connections	PS.1.AC.5 Interpret and evaluate, with and without appropriate technology, graphical and tabular data displays for appropriateness of type of graph or data display	PS.1.AC.5.b
	Algebraic Connections	PS.1.AC.5 Interpret and evaluate, with and without appropriate technology, graphical and tabular data displays for scale	PS.1.AC.5.c
	Algebraic Connections	PS.1.AC.5 Interpret and evaluate, with and without appropriate technology, graphical and tabular data displays for overall message	PS.1.AC.5.d
	Statistics	DA.4.S.1 Summarize distributions of univariate data by determining and interpreting measures of center, spread, position, boxplot, and effects of changing units on summary measures	DA.4.S.1
	Statistics	DA.4.S.2 Analyze distribution of continuous univariate data (both normal and non-normal)	DA.4.S.2
Statistics	DA.4.S.3 Construct and interpret graphical display of data	DA.4.S.3	
Statistics	DA.4.S.4 Compare distributions among sets of data.	DA.4.S.4	
Statistics	DA.5.S.1 Investigate and solve relevant problems, using technology to collect, organize, display, and analyze data in tabular, graphical, and symbolic forms	DA.5.S.1	

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Data, Statistics, and Probability Analyze data, understand descriptive statistics, make inferences and determine the likelihood that certain events will occur.	Statistics	DA.5.S.2 Use linear and nonlinear models to formulate predictions from data	DA.5.S.2
	Statistics	DA.5.S.3 Recognize the limitations of mathematical models based on sample data as representations of real world situations	DA.5.S.3
	Statistics	DA.5.S.4 Identify possible correlations between variables in a data set	DA.5.S.4
	Statistics	DA.5.S.5 Develop, use, and explain application and limitations of linear models and line of best fit (linear regression) in a variety of contexts	DA.5.S.5
	Statistics	DA.5.S.6 Use data from samples to make inferences about a population and determine whether claims are reasonable or unreasonable	DA.5.S.6
	Statistics	DA.5.S.7 Determine and use measures of central tendency and dispersion to describe and compare sets of data	DA.5.S.7
	Statistics	DA.5.S.8 Design, conduct, interpret, and justify the results of a probability experiment, sample, or statistical simulation	DA.5.S.8
	Statistics	DC.2.S.1 Compare and contrast controlled experiments and observational studies and the conclusions one can draw from each	DC.2.S.1
	Statistics	DC.2.S.2 Compare and contrast population and sample, and parameter and statistic	DC.2.S.2
	Statistics	DC.2.S.3 Identify biased sampling methods	DC.2.S.3
	Statistics	DC.2.S.4 Describe simple random sampling	DC.2.S.4
	Statistics	DC.2.S.5 Select a data collection method appropriate for a given context	DC.2.S.5
	Statistics	DC.2.S.6 Investigate and describe sampling techniques, such as simple random sampling, stratified sampling, and cluster sampling	DC.2.S.6
	Statistics	DC.2.S.7 Determine which sampling technique is best, given a particular context	DC.2.S.7

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Data, Statistics, and Probability Analyze data, understand descriptive statistics, make inferences and determine the likelihood that certain events will occur.	Statistics	DC.2.S.8 Plan and conduct a survey to answer a question or address an issue, identify possible sources of bias, and describe ways to reduce bias	DC.2.S.8
	Statistics	DC.3.S.1 Analyze categorical data	DC.3.S.1
	Statistics	DC.3.S.2 Use and compare methods of data collection	DC.3.S.2
	Statistics	DC.3.S.3 Apply statistical principles and methods in sample surveys; identify difficulties	DC.3.S.3
	Statistics	DC.3.S.4 Apply concepts of probability to solve familiar and unfamiliar contextual problems	DC.3.S.4
	Statistics	DS.1. S.1 Create, compare, and evaluate different graphic displays of the same data, using histograms, frequency polygons, cumulative distribution functions, pie charts, scatter plots, stem-and-leaf plots, and box-and-whisker plots and draw these by hand or use a computer spread sheet program	DS.1. S.1
	Statistics	DS.1.S.2 Compute and use mean, mode, weighted mean, geometric mean, harmonic mean, range, quartiles, variance, and standard deviation	DS.1.S.2
	Statistics	P.6.S.1 Understand the counting principle, permutations and combinations and use them to solve problems	P.6.S.1
	Statistics	P.6.S.2 Compare and contrast permutations and combinations	P.6.S.2
	Statistics	P.6.S.3 Calculate the number of permutations of n objects taken r at a time	P.6.S.3
	Statistics	P.6.S.4 Calculate the number of combinations of n objects taken r at a time	P.6.S.4
	Statistics	P.6.S.5 Calculate relative frequency and expected frequency	P.6.S.5
	Statistics	P.6.S.6 Find conditional probabilities for dependent, independent, and mutually exclusive events	P.6.S.6
	Statistics	P.7.S.1 Compare and contrast independent and dependent random variables	P.7.S.1
	Statistics	P.8.S.1 Understand and use the addition rule to calculate probabilities for mutually exclusive and other events	P.8.S.1

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Data, Statistics, and Probability Analyze data, understand descriptive statistics, make inferences and determine the likelihood that certain events will occur.	Statistics	P.8.S.2 Understand and use the multiplication rule to calculate probabilities for independent and dependent events	P.8.S.2
	Statistics	P.8.S.5 Use the binomial distribution to calculate probabilities associated with experiments for which there are only two possible outcomes	P.8.S.5
	Statistics	P.9.S.1 Design and conduct an experiment that simulates a binomial distribution	P.9.S.1
	Statistics	P.9.S.2 Design and conduct an experiment that simulates a geometric distribution	P.9.S.2
	Statistics	SI.10.S.1 Explore the characteristics and applications of the normal distribution and standardized scores	SI.10.S.1
	Transition to College Mathematics	PS.4.TM.1 Formulate questions that can be addressed with data and, with appropriate technology, collect, organize, and display relevant data to answer the questions	PS.4.TM.1
	Transition to College Mathematics	PS.4.TM.2 Describe and summarize data numerically using central tendency variation, position statistics, and distributions	PS.4.TM.2
	Transition to College Mathematics	PS.4.TM.3 Use counting methods, permutations, and combinations to evaluate the likelihood of events occurring	PS.4.TM.3
	Transition to College Mathematics	PS.4.TM.4 Make inferences and predictions using recursion on the table	PS.4.TM.4.a
	Transition to College Mathematics	PS.4.TM.4 Make inferences and predictions using inspection of the graph	PS.4.TM.4.b
Transition to College Mathematics	PS.4.TM.4 Make inferences and predictions using algebraic manipulation on the model	PS.4.TM.4.c	
Transition to College Mathematics	PS.4.TM.5 Explain, conjecture, summarize, and defend results orally, in writing, and through the use of appropriate technology	PS.4.TM.5	

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Geometry and Measurement Solve problems based on understanding the properties of shapes, such as triangles and circles, and the spatial relationships between angles and lines.	Algebra III	LQF.1.AIII.3 Develop, write, and graph, given a point and the slope, two points, or a point and a line, the equation of a parallel line	LQF.1.AIII.3.a
	Algebra III	LQF.1.AIII.3 Develop, write, and graph, given a point and the slope, two points, or a point and a line, the equation of a perpendicular line	LQF.1.AIII.3.b
	Algebra III	LQF.1.AIII.3 Develop, write, and graph, given a point and the slope, two points, or a point and a line, the equation of the perpendicular bisector of a line segment	LQF.1.AIII.3.c
Problem Solving Solve abstract and practical problems, applying and adapting a variety of strategies. Monitor progress and evaluate answers in terms of questions asked.	Algebra III	ELF.3.AIII.2 Develop and apply, with and without appropriate technology, the laws of logarithms and the change-of-base formula to simplify and evaluate expressions	ELF.3.AIII.2
	Algebra III	ELF.3.AIII.3 Solve, with and without appropriate technology, equations and real world problems involving exponential and logarithmic expressions graphically, algebraically and numerically	ELF.3.AIII.3
	Algebra III	ELF.3.AIII.4 Find, with and without appropriate technology, the domain, range, intercepts, and asymptotes of logarithmic and exponential functions	ELF.3.AIII.4
	Algebra III	LQF.1.AIII.1 Evaluate, add, subtract, multiply, divide and compose functions and determine appropriate domain and range restrictions	LQF.1.AIII.1
	Algebra III	LQF.1.AIII.4 Perform computations with radicals simplify radicals with different indices	LQF.1.AIII.4.a
	Algebra III	LQF.1.AIII.4 Perform computations with radicals add, subtract, multiply and divide radicals	LQF.1.AIII.4.b
	Algebra III	LQF.1.AIII.4 Perform computations with radicals solve equations that contain radicals or radical expressions	LQF.1.AIII.4.c
	Algebra III	LQF.1.AIII.5 Solve, with and without appropriate technology, quadratic equations by extracting the square root	LQF.1.AIII.5.a
	Algebra III	LQF.1.AIII.5 Solve, with and without appropriate technology, quadratic equations by graphing	LQF.1.AIII.5.b

Alignments of PSAT/NMSQT Skill Categories and State Standards

PSAT/NMSQT Skill Category and Description of Skills	Arkansas Math: Curriculum Framework 2004		
	Course/ Level	Standard	Standard ID
Problem Solving Solve abstract and practical problems, applying and adapting a variety of strategies. Monitor progress and evaluate answers in terms of questions asked.	Algebra III	LQF.1.AIII.5 Solve, with and without appropriate technology, quadratic equations by factoring	LQF.1.AIII.5.c
	Algebra III	LQF.1.AIII.5 Solve, with and without appropriate technology, quadratic equations by completing the square	LQF.1.AIII.5.d
	Algebra III	LQF.1.AIII.5 Solve, with and without appropriate technology, quadratic equations by using the quadratic formula	LQF.1.AIII.5.e
	Algebra III	LQF.1.AIII.6 Graph, with and without appropriate technology, functions defined as piece-wise and step	LQF.1.AIII.6
	Algebra III	LQF.1.AIII.7 Solve, with and without appropriate technology, systems of linear and quadratic equations and inequalities with two or more variables	LQF.1.AIII.7
	Algebra III	PRF.2.AIII.1 Determine the factors of polynomials by using factoring techniques including grouping, the difference of two squares, and the sum or difference of two cubes	PRF.2.AIII.1.a
	Algebra III	PRF.2.AIII.1 Determine the factors of polynomials by using synthetic division	PRF.2.AIII.1.b
	Algebra III	PRF.2.AIII.3 Simplify, add, subtract, multiply, and divide with rational expressions	PRF.2.AIII.3
	Algebra III	PRF.2.AIII.5 Establish the relationship between radical expressions and expressions containing rational exponents, and simplify variable expressions containing rational exponents using the laws of exponents	PRF.2.AIII.5
	Algebra III	SS.4.AIII.3 Solve, with and without appropriate technology, problems involving the sum (including Sigma notation) of finite and infinite sequences and series	SS.4.AIII.3
	Algebra III	SS.4.AIII.4 Determine, with and without appropriate technology, the nth term of a sequence given a rule or specific terms	SS.4.AIII.4
	Algebra III	SS.4.AIII.5 Use, with and without appropriate technology, sequences and series to solve real world problems	SS.4.AIII.5
	Algebraic Connections	LF.2.AC.3 Determine the independent and dependent variables, domain and range of a relation from an algebraic expression, graph, set of ordered pairs, or table of data	LF.2.AC.3

Alignments of PSAT/NMSQT Skill Categories and State Standards

PSAT/NMSQT Skill Category and Description of Skills	Arkansas Math: Curriculum Framework 2004		
	Course/ Level	Standard	Standard ID
Problem Solving Solve abstract and practical problems, applying and adapting a variety of strategies. Monitor progress and evaluate answers in terms of questions asked.	Algebraic Connections	LF.2.AC.5 Calculate the slope given two points	LF.2.AC.5.a
	Algebraic Connections	LF.2.AC.5 Calculate the slope given a graph of a line	LF.2.AC.5.b
	Algebraic Connections	LF.2.AC.5 Calculate the slope given an equation of a line	LF.2.AC.5.c
	Algebraic Connections	LF.2.AC.6 Determine, using slope, whether a pair of lines are parallel, perpendicular, or neither	LF.2.AC.6
	Algebraic Connections	LF.2.AC.8 Graph, with and without appropriate technology, functions defined as piece-wise and step	LF.2.AC.8
	Algebraic Connections	NF.4.AC.1 Factor polynomials greatest common factor	NF.4.AC.1.a
	Algebraic Connections	NF.4.AC.1 Factor polynomials binomials (difference of squares)	NF.4.AC.1.b
	Algebraic Connections	NF.4.AC.1 Factor polynomials trinomials	NF.4.AC.1.c
	Algebraic Connections	NF.4.AC.1 Factor polynomials combinations of the above	NF.4.AC.1.d
	Algebraic Connections	NF.4.AC.2 Simplify, add, subtract and multiply radical expressions	NF.4.AC.2
	Algebraic Connections	NF.4.AC.3 Solve, with and without appropriate technology, quadratic equations with real number solutions using factoring and the quadratic formula	NF.4.AC.3
	Algebraic Connections	NF.4.AC.4 Determine the independent and dependent variables, domain and range of a relation from algebraic equations, graphs, sets of ordered pairs, or tables of data	NF.4.AC.4
	Algebraic Connections	PS.1.AC.1 Apply counting techniques to determine the number of outcomes tree diagram	PS.1.AC.1.a
	Algebraic Connections	PS.1.AC.1 Apply counting techniques to determine the number of outcomes fundamental Counting Principle	PS.1.AC.1.b

Alignments of PSAT/NMSQT Skill Categories and State Standards

PSAT/NMSQT Skill Category and Description of Skills	Arkansas Math: Curriculum Framework 2004		
	Course/ Level	Standard	Standard ID
Problem Solving Solve abstract and practical problems, applying and adapting a variety of strategies. Monitor progress and evaluate answers in terms of questions asked.	Algebraic Connections	PS.1.AC.1 Apply counting techniques to determine the number of outcomes permutations (with and without repetition)	PS.1.AC.1.c
	Algebraic Connections	PS.1.AC.1 Apply counting techniques to determine the number of outcomes combinations	PS.1.AC.1.d
	Algebraic Connections	PS.1.AC.3 Compute and display theoretical and experimental probability including the use of Venn diagrams. simple	PS.1.AC.3.a
	Algebraic Connections	PS.1.AC.3 Compute and display theoretical and experimental probability including the use of Venn diagrams. complementary	PS.1.AC.3.b
	Algebraic Connections	PS.1.AC.3 Compute and display theoretical and experimental probability including the use of Venn diagrams. compound (mutually exclusive, inclusive, independent and dependent events)	PS.1.AC.3.c
	Algebraic Connections	SEI.3.AC.1 Solve, with and without appropriate technology, multi-step equations and inequalities with rational coefficients numerically, algebraically and graphically	SEI.3.AC.1
	Algebraic Connections	SEI.3.AC.2 Solve, with and without appropriate technology, systems of two linear equations and systems of two inequalities numerically, algebraically and graphically	SEI.3.AC.2
	Algebraic Connections	SEI.3.AC.3 Solve linear formulas and literal equations for a specified variable	SEI.3.AC.3
	Algebraic Connections	SEI.3.AC.4 Use, with and without appropriate technology, coordinate geometry to represent and solve problems including midpoint, length of a line segment and Pythagorean Theorem	SEI.3.AC.4
	Algebraic Connections	SEI.3.AC.5 Determine and describe, with and without appropriate technology, the resulting change in the perimeter, area, and volume when one or more dimensions change (apply this idea in solving real world problems)	SEI.3.AC.5
Algebraic Connections	SEI.3.AC.6 Apply linear, piece-wise and step functions to real world situations that involve a combination of rates, proportions and percents such as sales tax, simple interest, social security, constant depreciation and appreciation, arithmetic sequences, constant rate of change, income taxes, postage, utility bills, commission, and traffic tickets	SEI.3.AC.6	
Statistics	DC.2.S.5 Select a data collection method appropriate for a given context	DC.2.S.5	

Alignments of PSAT/NMSQT Skill Categories and State Standards

PSAT/NMSQT Skill Category and Description of Skills	Arkansas Math: Curriculum Framework 2004		
	Course/ Level	Standard	Standard ID
Problem Solving Solve abstract and practical problems, applying and adapting a variety of strategies. Monitor progress and evaluate answers in terms of questions asked.	Statistics	DC.2.S.7 Determine which sampling technique is best, given a particular context	DC.2.S.7
	Statistics	DC.3.S.4 Apply concepts of probability to solve familiar and unfamiliar contextual problems	DC.3.S.4
	Statistics	DS.1.S.2 Compute and use mean, mode, weighted mean, geometric mean, harmonic mean, range, quartiles, variance, and standard deviation	DS.1.S.2
	Statistics	P.6.S.1 Understand the counting principle, permutations and combinations and use them to solve problems	P.6.S.1
	Statistics	P.6.S.3 Calculate the number of permutations of n objects taken r at a time	P.6.S.3
	Statistics	P.6.S.4 Calculate the number of combinations of n objects taken r at a time	P.6.S.4
	Statistics	P.6.S.5 Calculate relative frequency and expected frequency	P.6.S.5
	Statistics	P.6.S.6 Find conditional probabilities for dependent, independent, and mutually exclusive events	P.6.S.6
	Statistics	P.8.S.1 Understand and use the addition rule to calculate probabilities for mutually exclusive and other events	P.8.S.1
	Statistics	P.8.S.2 Understand and use the multiplication rule to calculate probabilities for independent and dependent events	P.8.S.2
	Statistics	P.8.S.5 Use the binomial distribution to calculate probabilities associated with experiments for which there are only two possible outcomes	P.8.S.5
	Statistics	P.9.S.1 Design and conduct an experiment that simulates a binomial distribution	P.9.S.1
	Statistics	P.9.S.2 Design and conduct an experiment that simulates a geometric distribution	P.9.S.2
	Transition to College Mathematics	EF.2.TM.4 Make inferences and predictions using recursion on the table	EF.2.TM.4.a
	Transition to College Mathematics	EF.2.TM.4 Make inferences and predictions using inspection of the graph	EF.2.TM.4.b

Alignments of PSAT/NMSQT Skill Categories and State Standards

PSAT/NMSQT Skill Category and Description of Skills	Arkansas Math: Curriculum Framework 2004		
	Course/ Level	Standard	Standard ID
Problem Solving Solve abstract and practical problems, applying and adapting a variety of strategies. Monitor progress and evaluate answers in terms of questions asked.	Transition to College Mathematics	EF.2.TM.4 Make inferences and predictions using algebraic manipulation on the model	EF.2.TM.4.c
	Transition to College Mathematics	LF.1.TM.2 Determine the initial condition and the rate of change in real world situations described by $y = mx + b$	LF.1.TM.2
	Transition to College Mathematics	LF.1.TM.3 Make inferences and predictions using recursion on the table	LF.1.TM.3.a
	Transition to College Mathematics	LF.1.TM.3 Make inferences and predictions using inspection on the graph	LF.1.TM.3.b
	Transition to College Mathematics	LF.1.TM.3 Make inferences and predictions using algebraic manipulation on the model	LF.1.TM.3.c
	Transition to College Mathematics	MM.3.TM.3 Make inferences and predictions using recursion on the table	MM.3.TM.3.a
	Transition to College Mathematics	MM.3.TM.3 Make inferences and predictions using inspection of the graph	MM.3.TM.3.b
	Transition to College Mathematics	MM.3.TM.3 Make inferences and predictions using algebraic manipulation on the model	MM.3.TM.3.c
	Transition to College Mathematics	PS.4.TM.4 Make inferences and predictions using recursion on the table	PS.4.TM.4.a
	Transition to College Mathematics	PS.4.TM.4 Make inferences and predictions using inspection of the graph	PS.4.TM.4.b

Alignments of PSAT/NMSQT Skill Categories and State Standards

PSAT/NMSQT Skill Category and Description of Skills	Arkansas Math: Curriculum Framework 2004		
	Course/ Level	Standard	Standard ID
<p>Problem Solving</p> <p>Solve abstract and practical problems, applying and adapting a variety of strategies. Monitor progress and evaluate answers in terms of questions asked.</p>	Transition to College Mathematics	PS.4.TM.4 Make inferences and predictions using algebraic manipulation on the model	PS.4.TM.4.c
<p>Reasoning</p> <p>Develop and use mathematical arguments and proofs to explore the truth of conjectures and justify conclusions.</p>	Algebra III	ELF.3.AIII.5 Draw and analyze, with and without appropriate technology, graphs of logarithmic and exponential functions	ELF.3.AIII.5
	Algebra III	LQF.1.AIII.8 Apply, with and without appropriate technology the concepts of functions to real world situations including linear programming	LQF.1.AIII.8
	Algebra III	PRF.2.AIII.2 Investigate and sketch the graphs of polynomial and rational functions using the characteristics of domain and range, upper and lower bounds, maximum and minimum points, asymptotes and end behavior, zeros, multiplicity of zeros, y-intercepts, and symmetry with and without appropriate technology	PRF.2.AIII.2
	Algebra III	PRF.2.AIII.6 Apply, with and without appropriate technology, the concepts of polynomial and rational functions to model real world situations	PRF.2.AIII.6
	Algebra III	SS.4.AIII.1 Develop, with and without appropriate technology, a representation of sequences recursively and explicitly	SS.4.AIII.1
	Algebraic Connections	LF.2.AC.4 Interpret the rate of change (slope) and intercepts within the context of everyday life	LF.2.AC.4
	Algebraic Connections	NF.4.AC.5 Identify and apply nonlinear functions to real world situations such as acceleration, area, volume, population, bacteria, compound interest, percent depreciation and appreciation, amortization, geometric sequences, etc.	NF.4.AC.5
	Algebraic Connections	PS.1.AC.2 Conduct and interpret simple probability experiments using manipulatives (spinners, dice, cards, coins)	PS.1.AC.2.a
	Algebraic Connections	PS.1.AC.2 Conduct and interpret simple probability experiments using simulations (using random number tables, graphing calculators, or computer software)	PS.1.AC.2.b
Algebraic Connections	PS.1.AC.4 Apply probability to real world situations such as weather prediction, game theory, fair division, insurance tables, and election theory	PS.1.AC.4	

Alignments of PSAT/NMSQT Skill Categories and State Standards

PSAT/NMSQT Skill Category and Description of Skills	Arkansas Math: Curriculum Framework 2004		
	Course/ Level	Standard	Standard ID
Reasoning Develop and use mathematical arguments and proofs to explore the truth of conjectures and justify conclusions.	Algebraic Connections	PS.1.AC.5 Interpret and evaluate, with and without appropriate technology, graphical and tabular data displays for consistency with the data	PS.1.AC.5.a
	Algebraic Connections	PS.1.AC.5 Interpret and evaluate, with and without appropriate technology, graphical and tabular data displays for appropriateness of type of graph or data display	PS.1.AC.5.b
	Algebraic Connections	PS.1.AC.5 Interpret and evaluate, with and without appropriate technology, graphical and tabular data displays for scale	PS.1.AC.5.c
	Algebraic Connections	PS.1.AC.5 Interpret and evaluate, with and without appropriate technology, graphical and tabular data displays for overall message	PS.1.AC.5.d
	Statistics	DA.4.S.2 Analyze distribution of continuous univariate data (both normal and non-normal)	DA.4.S.2
	Statistics	DA.4.S.3 Construct and interpret graphical display of data	DA.4.S.3
	Statistics	DA.4.S.4 Compare distributions among sets of data.	DA.4.S.4
	Statistics	DA.5.S.2 Use linear and nonlinear models to formulate predictions from data	DA.5.S.2
	Statistics	DA.5.S.6 Use data from samples to make inferences about a population and determine whether claims are reasonable or unreasonable	DA.5.S.6
	Statistics	DA.5.S.7 Determine and use measures of central tendency and dispersion to describe and compare sets of data	DA.5.S.7
	Statistics	DA.5.S.8 Design, conduct, interpret, and justify the results of a probability experiment, sample, or statistical simulation	DA.5.S.8
	Statistics	DC.2.S.1 Compare and contrast controlled experiments and observational studies and the conclusions one can draw from each	DC.2.S.1
	Statistics	DC.2.S.2 Compare and contrast population and sample, and parameter and statistic	DC.2.S.2
	Statistics	DC.3.S.1 Analyze categorical data	DC.3.S.1
Statistics	DC.3.S.2 Use and compare methods of data collection	DC.3.S.2	

Alignments of PSAT/NMSQT Skill Categories and State Standards

PSAT/NMSQT Skill Category and Description of Skills	Arkansas Math: Curriculum Framework 2004		
	Course/ Level	Standard	Standard ID
Reasoning Develop and use mathematical arguments and proofs to explore the truth of conjectures and justify conclusions.	Statistics	DC.3.S.3 Apply statistical principles and methods in sample surveys; identify difficulties	DC.3.S.3
	Statistics	DS.1. S.1 Create, compare, and evaluate different graphic displays of the same data, using histograms, frequency polygons, cumulative distribution functions, pie charts, scatter plots, stem-and-leaf plots, and box-and-whisker plots and draw these by hand or use a computer spread sheet program	DS.1. S.1
	Statistics	P.6.S.2 Compare and contrast permutations and combinations	P.6.S.2
	Statistics	P.7.S.1 Compare and contrast independent and dependent random variables	P.7.S.1
	Statistics	SI.10.S.1 Explore the characteristics and applications of the normal distribution and standardized scores	SI.10.S.1
	Transition to College Mathematics	EF.2.TM.2 Compare exponential models	EF.2.TM.2
	Transition to College Mathematics	EF.2.TM.3 Compare and contrast linear and exponential models	EF.2.TM.3
	Transition to College Mathematics	EF.2.TM.5 Develop, with appropriate technology, an algebraic model through the regression process	EF.2.TM.5
	Transition to College Mathematics	MM.3.TM.1 Establish connections between tables and graphs and the symbolic form using geometric and algebraic models (quadratic, rational, etc.)	MM.3.TM.1
	Transition to College Mathematics	PS.4.TM.3 Use counting methods, permutations, and combinations to evaluate the likelihood of events occurring	PS.4.TM.3

Alignments of PSAT/NMSQT Skill Categories and State Standards

PSAT/NMSQT Skill Category and Description of Skills	Arkansas Math: Curriculum Framework 2004		
	Course/ Level	Standard	Standard ID
Representation Use and translate among representations including verbal, numerical, symbolic and graphical to communicate mathematical ideas and solve problems.	Algebra III	LQF.1.AIII.2 Develop, write, and graph, with and without appropriate technology, equations of lines in slope-intercept, point-slope, and standard forms given a point and the slope	LQF.1.AIII.2.a
	Algebra III	LQF.1.AIII.2 Develop, write, and graph, with and without appropriate technology, equations of lines in slope-intercept, point-slope, and standard forms given two points	LQF.1.AIII.2.b
	Algebra III	LQF.1.AIII.2 Develop, write, and graph, with and without appropriate technology, equations of lines in slope-intercept, point-slope, and standard forms given real world data	LQF.1.AIII.2.c
	Algebra III	LQF.1.AIII.3 Develop, write, and graph, given a point and the slope, two points, or a point and a line, the equation of a parallel line	LQF.1.AIII.3.a
	Algebra III	LQF.1.AIII.3 Develop, write, and graph, given a point and the slope, two points, or a point and a line, the equation of a perpendicular line	LQF.1.AIII.3.b
	Algebra III	LQF.1.AIII.3 Develop, write, and graph, given a point and the slope, two points, or a point and a line, the equation of the perpendicular bisector of a line segment	LQF.1.AIII.3.c
	Algebraic Connections	LF.2.AC.1 Create, given a graph without an explicit formula, a written or oral interpretation of the relationship between the independent and dependent variables	LF.2.AC.1
	Algebraic Connections	LF.2.AC.2 Create, given a situation, a graph that models the relationship between the independent and dependent variables	LF.2.AC.2
	Algebraic Connections	LF.2.AC.7 Write an equation given two points	LF.2.AC.7.a
	Algebraic Connections	LF.2.AC.7 Write an equation given a point and y-intercept	LF.2.AC.7.b
Algebraic Connections	LF.2.AC.7 Write an equation given an x-intercept and y-intercept	LF.2.AC.7.c	
Algebraic Connections	LF.2.AC.7 Write an equation given a point and slope	LF.2.AC.7.d	
Algebraic Connections	LF.2.AC.7 Write an equation given a table of data	LF.2.AC.7.e	

Alignments of PSAT/NMSQT Skill Categories and State Standards

PSAT/NMSQT	Arkansas Math: Curriculum Framework 2004		
Skill Category and Description of Skills	Course/ Level	Standard	Standard ID
<p>Representation</p> <p>Use and translate among representations including verbal, numerical, symbolic and graphical to communicate mathematical ideas and solve problems.</p>	Algebraic Connections	LF.2.AC.7 Write an equation given the graph of a line	LF.2.AC.7.f
	Statistics	DA.5.S.1 Investigate and solve relevant problems, using technology to collect, organize, display, and analyze data in tabular, graphical, and symbolic forms	DA.5.S.1
	Transition to College Mathematics	PS.4.TM.1 Formulate questions that can be addressed with data and, with appropriate technology, collect, organize, and display relevant data to answer the questions	PS.4.TM.1

PSAT/NMSQT Skills Insight™ Alignment to State Standards

Executive Summary, July 2010

Purpose

PSAT/NMSQT *Skills Insight*™ is a free online tool designed to help students and educators gain a better understanding of how PSAT/NMSQT® scores relate to specific academic skills. It provides a description of the academic skills that are typical of students scoring at each score band, suggestions for improvement, and practice test questions. Learn more by visiting www.collegeboard.com/psatskills.

The information provided by PSAT/NMSQT *Skills Insight* is organized by skill category. There are five skill categories for the critical reading section, nine for the mathematics section (4 content skill categories; 5 process skill categories), and 5 for the writing skills section. This report shows the alignment between state standards in English Language Arts and Mathematics and the content and skills measured by the PSAT/NMSQT.

Using Alignment Results with PSAT/NMSQT Reports

Schools and districts that administer the PSAT/NMSQT have access to the *Summary of Answers and Skills* (SOAS) report¹. SOAS reports summarize performance on test sections, skill categories, and individual test questions, and compare local results to the state or nation. Using SOAS and the alignment information provided in this report, schools and districts can develop remediation strategies to help students improve their college readiness skills, future SAT scores, and performance on state assessments.

Mathematics: Alignment Approach and Findings

- There are nine Skills Categories in Mathematics, representing both content and process skills: *Number and Operations; Algebra and Functions; Geometry and Measurement; Data, Statistics and Probability; Problem Solving; Representation; Reasoning; Connections and Communication*.
- Only standards for grades 9-12 were considered for these alignments. Within grades 9-12, the areas with the greatest concentration of alignments are the Number and Operations, Algebra and Geometry strands of the state standards. In most cases, Precalculus and Trigonometry were excluded from the alignment study.
- The organization and hierarchy of standards varies on a state-by-state basis. During the alignment process, the College Board aligned the PSAT/NMSQT skills to the most specific level of the state's standards.
- States often integrate process and content standards. In such cases, the state standard received an alignment to both a process skill category and a content skill category.
- Generally, there is strong correspondence between the PSAT/NMSQT Skills Categories in Mathematics and state standards. Coverage of the Skills Categories across a state standards document is dependent upon the specific state standards and on the degree of specificity of language employed within the standards.
- The PSAT/NMSQT is administered to students in grades 10 and 11; consequently, the strongest areas of alignment are in the content categories of *Number and Operations, Algebra and Functions* and *Geometry and Measurement* and in the process categories of *Problem Solving, Reasoning* and *Representations*. Considering the design and purpose of the PSAT/NMSQT, extensive alignments in upper levels of high school mathematics standards, including Trigonometry, are not intended or expected.

¹ Using the access code printed on the PSAT/NMSQT *Roster of Student Scores and Plans*, SOAS reports can be downloaded from www.collegeboard.com/reports beginning in the first week of January.

- The College Board content specialists who conducted the alignments have a deep understanding of the PSAT/NMSQT test specifications. Therefore, although multiple Skills Categories might link to a particular standard, these alignments display only the strongest and most appropriate matches.

English Language Arts: Alignment Approach and Findings

- Reading and Writing each have five PSAT/NMSQT Skills Categories. In Reading, the categories are *Determining the Meaning of Words*, *Author’s Craft*, *Reasoning and Inferencing*, *Organization and Ideas* and *Understanding Literary Elements*. In Writing, the categories are *Manage Word Choice and Grammatical Relationships Between Words*, *Manage Grammatical Structures Used to Modify or Compare*, *Manage Phrases and Clauses in a Sentence*; *Recognize Correctly Formed Sentences* and *Manage Order and Relationships of Sentences and Paragraphs*.
- The PSAT/NMSQT is administered to students in grades 10 and 11, and the College Board targeted the English Language Arts alignments at these specific grade levels. In states where the standards are organized by grade band (grades 9-10, 11-12) or by one high school band (grades 9-12), the College Board aligned to all high school grade levels.
- Given the purpose and design of the PSAT/NMSQT, the English Language Arts alignment is focused on the areas of reading and writing and does not include state standards in speaking, listening, or media literacy. Additionally, these alignments excluded genre-specific state standards (such as those related to American, British, or World literature), although the essential PSAT/NMSQT skills in Reading can be used to support instruction in literature.
- The organization and hierarchy of standards varies on a state-by-state basis. During the alignment process, the College Board aligned the PSAT/NMSQT skills to the most specific level of the state’s standards. Coverage of the Skills Categories across a state standards document is dependent upon the specific state standards and on the degree of specificity of language employed within the standards.
- In Writing, generally there is strong correspondence between the PSAT/NMSQT Skills Categories and state standards that focus on grammar, usage, language conventions, and the role of editing and revising in writing.
- In Reading, there is strong correspondence between the PSAT/NMSQT Skills Categories and state standards in the essential areas of vocabulary development (determine the meaning of unfamiliar words or of words with multiple meanings by understanding context and by analyzing roots, prefixes, and suffixes) and reading comprehension (determine the main idea and supporting details; understand the organization of passages; analyze the various elements of an author’s craft, including purpose, perspective, word choice, and use of rhetorical and literary devices and understand literary elements such as plot, characterization, and setting).

Summary

In summary, the PSAT/NMSQT Skills Categories correspond well to state standards. Educators can use these alignments to connect the PSAT/NMSQT to their local curricula and state standards to monitor student learning and to build a coherent instructional plan for their students.